Case Western Reserve Law Review

Volume 49 | Issue 1

1998

Sustainable Development as a Framework for National Governance

John C. Dernbach

CASE WESTERN RESERVE LAW REVIEW

VOLUME 49 FALL 1998 NUMBER 1

ARTICLES

SUSTAINABLE DEVELOPMENT AS A FRAMEWORK FOR NATIONAL GOVERNANCE

John C. Dernbach†

† Associate Professor, Widener University School of Law. B.S., University of Wisconsin-Eau Claire; J.D., University of Michigan. Don Brown, Dennis Corgill, Dan Esty, John Gedid, David Hodas, Patrick Kelly, Jim McElfish, Zygmunt Plater, Bob Power, J.B. Ruhl, Jim Salzman, Philippe Sands, Tom Sargentich, Andy Strauss and Kathy Yorkievitz commented on one or more earlier drafts. Librarians Linda Clifton and Pat Fox provided unfailing assistance in finding materials. The students in my spring 1997 seminar on law and sustainability helped stimulate this Article with their energy and ideas. Andrew Young and Aldona Stremmel provided research assistance. Special thanks to Jody Storm Gale and the editors and staff of the *Case Western Reserve Law Review*. Of course, I am responsible for any remaining errors. Please send comments to john.c.dernbach@law.widener.edu.

INTRODUCTION

In June 1992, at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, the nations of the world agreed to an ambitious and unprecedented global plan of action for addressing the related and growing problems of environmental degradation and poverty.[1] "Humanity stands at a defining moment in history," they stated in Agenda 21,[2] each committing itself to domestic implementation of the Agenda 21 program. Countries also agreed on twenty-seven principles, contained in the Rio Declaration on Environment and Development, to guide their efforts.[3] Agenda 21 and the Rio Declaration embrace "sustainable development," a conceptual framework for achieving economic development that is socially equitable and protective of the natural resource base on which human activity depends. Sustainable development is a response to the deeply held view that environmental degradation is the small price we pay to achieve progress; the price is not small, however, and environmental degradation prevents or threatens social and economic progress. Because of UNCED, sustainable development is also an internationally recognized normative framework for guiding and evaluating the behavior of national governments and other actors.[4]

Yet five years later, in June 1997, the United Nations General Assembly concluded a comprehensive review of progress since UNCED by stating that "overall trends with respect to sustainable development are worse today than they were in 1992."[5] Most countries were able to identify some domestic achievements, and there appeared to be a higher level of public support for sustainable development.[6] In that five-year period, however, few countries adopted or

---

[1] *See* Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151/26 (1992) [hereinafter Agenda 21].

[2] *Id.* ¶ 1.1.

[3] *See* Rio Declaration on Environment and Development, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151/5/Rev.1 [hereinafter Rio Declaration], *reprinted in* 31 INT'L LEGAL MATERIALS 874 (1992).

[4] *See* James P. Lester, Implementing Sustainable Development in High-Consumption Societies: The United States 5 (1997) (unpublished manuscript, on file with author); Philippe Sands, *International Law in the Field of Sustainable Development*, 1994 BRIT. Y.B. INT'L L. 303, 361 ("Agenda 21 provides, in effect, that national legal and regulatory arrangements are now a legitimate matter for international concern and activity.").

[5] *Programme for the Further Implementation of Agenda 21*, U.N. GAOR, 19th Special Sess., Annex, U.N. Doc. A/S-19/29, ¶ 4 (1997). With the principal exception of population growth, which appears to be headed toward stabilization in 2050, virtually every negative trend identified in Rio remained unchanged after five years. *See id. See generally* UNITED NATIONS ENVIRONMENT PROGRAMME, GLOBAL ENVIRONMENTAL OUTLOOK (1997) (describing regional trends and concluding that environmental degradation is occurring in all regions).

[6] *See* S. Jacob Scherr, *Five Years After Rio: An Assessment of Earth Summit Implementation*, *in* IMPLEMENTING SUSTAINABLE DEVELOPMENT IN THE U.S.: AN AGENDA FOR ACTION 9

modified laws or policies to change the overall trajectory of their unsustainable development patterns.[7] In addition, their modest actions were dwarfed by growth in the number of people living in poverty around the world and the further deterioration of the global environment.[8] Nations nonetheless reaffirmed their commitment to Agenda 21 and pledged "greater measurable progress in achieving sustainable development" by 2002, when the next comprehensive review is scheduled.[9]

A starting point for making progress, in the United States and other countries, is recognition of the domestic implications of sustainable development. Sustainable development is something of a mystery to domestic policy makers, economists, lawyers and academics, who tend to be separated from their international colleagues by a lack of common language, knowledge and experience.[10] Whatever reasons explain the lack of progress—absence of governmental leadership, political opposition from economic interests representing unsustainable practices, unwillingness to acknowledge the existence of difficult

---

(1997) (arriving at conclusion regarding public support based on review of more than 120 speeches by national leaders at General Assembly meeting).

[7] *See Assessment of Progress in the Implementation of Agenda 21 at the National Level: Report of the Secretary-General,* U.N. Commission on Sustainable Development, 5th Sess., U.N. Doc. E/CN/.17/1997/5 (1997) (noting progress in some areas but concluding, in paragraph 117, that the primary challenge is "in moving from the policy development phase to implementation"). At least two nongovernmental reports were prepared for individual countries. *See* JOHN HILLE, THE SUSTAINABILITY GAP: NORWAY'S FOLLOW-UP OF "OUR COMMON FUTURE" AND AGENDA 21 (1997) (a mixed report for Norway); John Dernbach and the Widener University Law School Seminar on Law and Sustainability, *U.S. Adherence to Its Agenda 21 Commitments: A Five-Year Review,* 27 ENVTL. L. REP. (ENVTL. L. INST.) 10,504 (1997) (finding little evidence that UNCED affected U.S. law or policy).

[8] *See Programme for the Further Implementation of Agenda 21, supra* note 5, ¶¶ 8, 9.

[9] *Id.* ¶¶ 3, 6. A major public focus during the five-year review seemed to be an upcoming meeting of the parties to the Framework Convention on Climate Change, one of two treaties that were opened for signature in Rio. *See* Framework Convention on Climate Change, May 9, 1992, *reprinted in* 31 INT'L LEGAL MATERIALS 849 (1992). (The other was the Convention on Biological Diversity, June 5, 1992, *reprinted in* 31 INT'L LEGAL MATERIALS 818 (1992)). The meeting on the climate change treaty, which was held at the end of 1997 in Kyoto, Japan, resulted in a protocol limiting emissions of greenhouse gases—so called because they are warming the earth's atmosphere. *See* Kyoto Protocol to the United Nations Framework Convention on Climate Change, U.N. Doc. FCCC/CP/197/L.7/Add. 1 (1997). Six months earlier, at the five-year review of UNCED, leaders of many developed countries gave speeches indicating their negotiating positions concerning the protocol, contributing to the impression that Kyoto was the sequel to Rio. *See, e.g., Clinton on the Global Environment: Some Progress but Much More Still to Be Done,* N.Y. TIMES, June 27, 1997, at A11 (transcript of President's address). This impression was unfortunate, because sustainable development embraces, but is not limited to, the work of the climate change convention. These two treaties also easily could have been opened for signature without an international conference.

[10] *See* Jessica Tuchman Mathews, *Introduction and Overview, in* PRESERVING THE GLOBAL ENVIRONMENT: THE CHALLENGE OF SHARED LEADERSHIP 26 (Jessica Tuchman Mathews ed., 1991).

problems—progress can not occur unless we first understand sustainable development.[11]

This Article adresses the meaning of sustainable development in three ways. First, it synthesizes Agenda 21, the Rio Declaration, and other texts into a conceptual framework for national governance. I focus on sustainable development as a framework for national governance because the primary texts do. The basic point of Agenda 21, after all, is action at the national level.[12] Because the framework for governance explains how the reconciliation between environment and development goals should occur, it is also a useful way of understanding what sustainable development means. Although it is not a complete theory for governance, sustainable development would modify both the purposes of national legal systems as well as their means of governance.

The Article's focus on sustainable development as a conceptual framework is an outgrowth of the way in which international law influences the development of domestic legal systems. To a great extent, domestic acceptance of international norms—whether they are binding or nonbinding under international law—is based on approval or acceptance of the values on which those norms are premised. It is thus generally recognized that domestic implementation of international norms is better achieved through voluntary means than through coercion.[13] Voluntary compliance occurs when states have internalized the norms on which the international rules are based;[14] countries are thus more likely to implement such norms fully and fairly than if

---

[11] *See, e.g.*, Maurice F. Strong, *From the Earth Summit: Down to Action*, ECODECISION, Spring 1997, at 18, 19 ("To make sustainable development work, we must clarify our understanding of what it requires and of how it can be integrated into public policy and private decisions at every level, from local to global."); Earth Council, *Rio+5 National Consultations—Overview* (visited Nov. 15, 1997) <http://www.ecouncil.ac.cr/rio/natreg/natsum.htm> (identifying need for "operational definition for sustainable development" at national level as first of five problems in implementing sustainable development).

[12] *See* Agenda 21, *supra* note 1, ¶ 1.3 (stating Agenda 21's "successful implementation is first and foremost the responsibility of Governments"); *see also* SUSTAINABLE DEVELOPMENT AND GOOD GOVERNANCE (Konrad Ginther et al. eds., 1995) (conference papers of International Law Association Committee on Legal Aspects of Sustainable Development); Sands, *supra* note 4, at 355 (stating governance is "[o]ne of the principle themes of UNCED").

I am not arguing that this national governance framework is the only way to understand sustainable development. Plainly, sustainable development is also an international framework. Plainly, too, sustainable development has specific meanings in fields such as forestry, agriculture and building design. The national governance framework, however, is both an essential meaning and the meaning on which the UNCED agreements focused. This Article focuses primarily on the environmental aspects of sustainable development because these are the ways in which sustainable development modifies our understanding of development.

[13] *See* Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 YALE L.J. 2599, 2645 (1997) (reviewing ABRAM CHAYES & ANTONIA HANDLER CHAYES, THE NEW SOVEREIGNTY: COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS (1995), and THOMAS M. FRANCK, FAIRNESS IN INTERNATIONAL LAW AND INSTITUTIONS (1995)).

[14] *See id.* at 2645-46.

they were simply imposed from outside. Norms cannot be internalized unless they are understood.

No such exposition of the sustainable development framework appears in the literature. Instead, the literature tends to view sustainable development primarily in terms of its implications for international law and international institutions.[15] To the extent that it focuses on domestic legal and policy implications, the literature tends to ignore the international texts,[16] bemoan the lack of an accepted definition for sustainable development and then invent a definition or borrow one from another source,[17] or focus only on selected issues.[18] The idea that UNCED created a coherent overall framework for domestic governance has not received serious attention.

The international texts, such as Agenda 21, are important because they have focused international attention on sustainable development, have shaped the meaning of the concept, will continue to shape its meaning, and have begun to make it relevant to national and international decision-making. Because of the political commitment they represent, and their reflection of much of the best current thinking, they deserve consideration in any serious discussion of sustainable development. Indeed, these texts define sustainable development—not in a single sentence but as a bundle of related concepts. It is not possible to select from the bundle certain concepts and describe the result as sustainable development. Nor is it possible to understand the overall framework from even the best discussions of specific issues, such as sustainable forestry or trade.

The second way in which this article addresses the meaning of sustainable development is by arguing that sustainable development

---

[15] *See, e.g.*, GLOBAL ACCORD: ENVIRONMENTAL CHALLENGES AND INTERNATIONAL RESPONSES (Nazli Choucri ed., 1993); INSTITUTIONS FOR THE EARTH (Peter M. Haas et al. eds., 1993); PHILLIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW I: FRAMEWORKS, STANDARDS AND IMPLEMENTATION 208 (1995) [hereinafter PRINCIPLES]; Marc Pallemaerts, *International Environmental Law in the Age of Sustainable Development: A Critical Assessment of the UNCED Process*, 15 J.L. & COM. 623 (1996); Anna Syngellakis, *The Concept of Sustainable Development in European Community Law and Policy*, 24 CAMBRIAN L. REV. 59 (1993).

[16] *See, e.g.*, THE PRESIDENT'S COUNCIL ON SUSTAINABLE DEVELOPMENT, SUSTAINABLE AMERICA: A NEW CONSENSUS FOR PROSPERITY, OPPORTUNITY AND A HEALTHY ENVIRONMENT FOR THE FUTURE (1996) (lacking any references to Agenda 21, Rio Declaration, or even UNCED).

[17] *See, e.g.*, Sands, *supra* note 4, at 317-18 (citing sources).

[18] A growing number of books and articles concern specific sustainable development issues in the United States. *See, e.g.*, DEFINING SUSTAINABLE FORESTRY (Gregory H. Aplet et al. eds., 1993); John H. Davidson, *Conservation Agriculture: An Old New Idea*, NAT. RESOURCES & ENV'T, Winter 1995, at 20; Robert B. Keiter, *Beyond the Boundary Line: Constructing a Law of Ecosystem Management*, 65 U. COLO. L. REV. 293 (1994); James Salzman, *Sustainable Consumption and the Law*, 27 ENVTL. L. 1243 (1997); Gerald Torres, *Environmental Justice: The Legal Meaning of a Social Movement*, 15 J.L. & COM. 597 (1996). *But see* Symposium, *The Role of Law in Defining Sustainable Development*, 3 WIDENER L. SYMP. J. 1 (forthcoming 1998) (exploring sustainable development issues from a broader perspective).

provides a powerful and attractive set of tools for reinvigorating governance. Sustainable development is a pragmatic, coherent and positive response to deteriorating global conditions. It would make governance more economically efficient, more socially productive and more environmentally protective. As a framework for governance, sustainable development also provides a response to many current trends that undermine the legitimacy and effectiveness of national governments in general, particularly globalization of the economy and the free market ideology that has become more prevalent since the collapse of the Soviet Union in 1989.[19] Indeed, sustainable development provides an alternative to that ideology.

Finally, the Article identifies unresolved issues in the sustainable development framework. These include the comparative responsibilities of developed and developing countries, high consumption of materials and energy by developed countries, the role of international trade and the substantial commitment most governments already have made to unsustainable economic activities. Although such gaps remain to be filled, the framework is still a useful starting point and guide for national efforts.[20] Much of the framework's value, in fact, is in the important issues it forces us to confront.

This framework for national governance is best summarized by an overview of this Article. The post-World War II development model fails to protect the environment and the natural resources upon which development depends, as Part I explains. Sustainable development affirms the importance of social and economic development goals in governance but adds another goal, protection of natural resources and the environment, and emphasizes that these goals must be furthered for the sake of future generations. In addition to environmental protection, sustainable development is also intended to contribute to a more just or equitable social order.

---

[19] For a description and analysis of these trends, which began in earnest before the collapse of the Soviet Union, see DANIEL YERGIN & JOSEPH STANISLAW, THE COMMANDING HEIGHTS: THE BATTLE BETWEEN GOVERNMENT AND THE MARKETPLACE THAT IS REMAKING THE MODERN WORLD (1998). Through much of the twentieth century, the Soviet Union's apparent success in marshalling resources and productivity had provided a strong argument for greater government control over national economies. When the Berlin Wall collapsed, "one of the most important drivers of government control" fell with it. *Id.* at 126. Governments are thus seeking to redefine their roles in the wake of worldwide trends at the national level toward privatization, economic deregulation and trade liberalization. *See id.* at 373-82. As they do, there remain significant questions about whether the market by itself can protect the environment, manage population trends, ensure that basic necessities of life are provided, treat people fairly, and protect national and local interests and identities. *See id.* at 382-87. These questions are also among those most central to sustainable development. As this Article argues, national governments need to play a role, though probably not a dominating one, in all of these issues.

[20] *Cf.* DANIEL A. FARBER & PHILIP P. FRICKEY, LAW AND PUBLIC CHOICE 5 (1991) (arguing that public choice theory "can provide a useful framework for analysis" of the American legal system even though it is incomplete).

The basic governing principles for sustainable development are explained in Part II. National governments need to foster sustainable development by energizing all parts of society to seek that end. All countries should ensure that environmental, social and economic goals are harmonized; that polluters bear the environmental costs of their activities; and that natural features and human health are protected even where the scientific evidence for adverse effects is uncertain. Developed countries are expected to play a leadership role, not only in implementing national sustainable development policies but also in providing financial and other assistance to developing nations.

National governments would need to modify or adopt laws and policies in response to these principles. As part III explains, governments would need to repeal or modify subsidies and other laws that encourage or allow unsustainable development. They would also need to use a variety of instruments to harness market forces and individual behavior on behalf of sustainable development. Implementation also requires the adaptation of sustainable development norms to local cultures, natural systems and economies.

Two substantial and related objections to implementation of sustainable development norms are addressed in Part IV. One is that Agenda 21, the Rio Declaration and similar texts are not binding in international law. As a result, they may be trumped by trade and other treaties, which are legally binding, or they may simply be ignored. The other objection is that it may be impossible to reverse a well-established pattern of national governance supported by economic interests in unsustainable development. The basic means of overcoming these objections, however, are explicit or implicit in the instruments themselves. Probably the most significant of these are public participation and public information, although it is not clear that these means will be effective.

In fact, it is increasingly obvious that existing international instruments and processes, by themselves, will not bring about sustainable development. International cooperation is necessary but not sufficient. If growing poverty and environmental degradation are to be addressed successfully, nations themselves will need to act effectively. By understanding sustainable development as a framework for national governance, we may increase our chances of overcoming these problems.

I. SUSTAINABILITY AND NATIONAL GOVERNANCE

Sustainable development would change the purposes of national governance as they have been understood in the postwar period to include protection of the environment and natural resources, and to preserve not only the environment but also existing social and eco-

nomic attainments for future generations. In addition, sustainable development would result in greater equity within and among nations.

A. Old Model: Development

Development is often understood as a synonym for economic development or economic growth. Because sustainable development builds on and modifies the international approach to development, however, development needs to be understood more broadly. In the international community, development in the past half-century includes at least four related concepts: peace and security, economic development, social development and national governance that secures peace and development. Each concept is reflected in major multilateral treaties that provide a common framework for relations among sovereign nations as well as a shared set of national purposes. These agreements, however, are virtually silent about environmental protection.

National sovereignty provides the basic context for international relations. The ability of states to govern themselves and make decisions based on their understanding of their own interests has been recognized in international law for centuries.[21] The United Nations Charter recognizes national sovereignty by seeking to "develop friendly relations among nations"[22] and by prohibiting the United Nations from intervening in matters that are "essentially within the domestic jurisdiction of any state."[23] These four concepts, however, provide a framework within which that sovereignty is to be exercised.

The need for peace and security was the primary reason for formation of the United Nations at the end of World War II. The United Nations was created to "maintain international peace and security" through a variety of means.[24] Member nations are obliged not to use, or threaten to use, force against the territorial integrity of other nations.[25] The U.N. Security Council is expressly authorized to use economic sanctions, military force and other measures against "any threat to the peace, breach of the peace, or act of aggression."[26] A

---

[21] *See, e.g.*, Leo Gross, *The Peace of Westphalia, 1648-1948*, 42 AM. J. INT'L L. 20 (1948).

[22] U.N. CHARTER art. 1, para. 2.

[23] U.N. CHARTER art. 2, para. 7. Other treaties specifically recognize that national sovereignty includes the right of nations to "freely dispose of their natural wealth and resources." *See, e.g.*, International Covenant on Civil and Political Rights, Dec. 16, 1966, 21 U.N. GAOR, 21st Sess., Supp. No. 16, at 53, U.N. Doc. A/6316 (1966); International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, art. 1, ¶ 2, 21 U.N. GAOR Supp. No. 16, at 49, U.N. Doc. A/6316 (1967).

[24] U.N. CHARTER art. 1, para. 1.

[25] *See* U.N. CHARTER art. 2, para. 4.

[26] *Id.* arts. 39-42. Member states are legally obliged to conform to Security Council decsions not involving the use of force. *See id.* arts. 25, 41. Although the Security Council is the U.N. entity primarily responsible for peace and security, *see id.* art. 24, para. 1, the General

substantial number of multilateral and bilateral treaties also limit the use of particular weapons and weapons systems.[27]

Economic development is in many ways the most prominent component of development, and it represents a dominant policy goal of most governments.[28] Several important financial institutions and international agreements were created in the postwar period to foster development, especially economic development. The International Bank for Reconstruction and Development, known as the World Bank, was created to rebuild war-damaged economies and to encourage development "in less developed countries" by providing low-interest loans, grants and other assistance.[29] The 1947 General Agreement on Tariffs and Trade attempted to raise standards of living and develop the economies of member states by progressively removing barriers to trade.[30] The U.N. Development Programme, the development arm of the United Nations, was created in 1965 by merging two development funds, one of which had been established shortly after the founding of the United Nations.[31]

Social development is closely linked to human rights. The U.N. Charter commits the organization to promoting "higher standards of

---

Assembly is authorized to make recommendations concerning such issues to the Security Council or to member nations, *see id.* art. 11.

[27] *See generally* Richard G. Tarasofsky, *International Law and the Protection of the Environment During International Armed Conflict, in* GREENING INTERNATIONAL LAW 243 (Philippe Sands ed., 1994) (explaining basic conventions relating to warfare, including warfare and the environment).

[28] *See* LOUIS HENKIN, THE AGE OF RIGHTS 91 (1990) (stating that for the most part, development "connotes economic 'growth' to raise the gross national product, to improve trade balance and magnify per capita earnings").

[29] Articles of Agreement of the International Bank for Reconstruction and Development, Dec. 27, 1945, art. I(i), 60 Stat. 1440. The official purpose of World Bank lending policies is to end poverty. For an official pre-UNCED analysis of successes, failures and lessons of World Bank development projects, see WARREN C. BAUM & STOKES M. TOLBERT, INVESTING IN DEVELOPMENT: LESSONS OF WORLD BANK EXPERIENCE (1985). Another entity, the International Monetary Fund, was created to foster economic growth and trade by ensuring the stability of the international monetary system and, when necessary, providing a reserve fund to help countries meet their financial obligations. *See* Articles of Agreement of the International Monetary Fund, Dec. 27, 1945, 60 Stat. 1401.

The World Bank and the IMF do not necessarily agree on the proper approach to economic development. *See* David E. Sanger, *Dissension Erupts at Talks on World Financial Crisis*, N.Y. TIMES, Oct. 7, 1998, at A6 (citing speech by World Bank president James D. Wolfensohn criticizing the IMF for ignoring unemployment and political stability in its effort to stabilize national economies).

[30] *See* General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11. In 1994, GATT was substantially amended and the World Trade Organization was given authority to oversee its implementation. *See* Final Act Embodying the Results of the Uruguay Round of Trade Negotiations, April 15, 1994, *reprinted in* 33 INT'L LEGAL MATERIALS 1125 (1994).

[31] *See* UNITED NATIONS DEVELOPMENT PROGRAMME, GENERATION: PORTRAIT OF THE UNITED NATIONS DEVELOPMENT PROGRAMME, 1950-1985, 12-28 (1985) [hereinafter GENERATION]; *see also Agenda For Development,* Ad Hoc Open-Ended Working Group of the General Assembly on an Agenda for Development, ¶ 1, U.N. Doc. A/AC.250/1, Annex (1997) [hereinafter *Agenda for Development*] ("Development is one of the main priorities of the United Nations.").

living, full employment, and conditions of economic and social progress and development."[32] Two human rights treaties opened for signature in 1966 provide a more complete expression of, and commitment to, social development. The first, the International Covenant on Civil and Political Rights,[33] includes such rights as freedom from torture and degrading punishment;[34] the right of a person charged with an offense to be informed of the charge;[35] "freedom of thought, conscience and religion;"[36] the right to peaceful assembly;[37] the right to vote in "genuine periodic elections;"[38] and the right to equality before the law regardless of race, religion, sex or other status.[39] The other treaty, the International Covenant on Economic, Social and Cultural Rights, recognizes the right of each person to have, among other things: an opportunity for gainful employment;[40] a decent standard of living, "including adequate food, clothing and housing;"[41] the highest attainable standard of health;[42] education;[43] and an opportunity to participate in cultural life.[44] A variety of other treaties concerning these or related human rights have come into force, including many regional treaties.[45]

These three components are closely related. Social and economic development are impossible in the absence of peace. Economic and social development are themselves interrelated.[46] Countries that have

---

[32] U.N. CHARTER, art. 55(a). The United Nations also is designed to promote solutions to economic, social and related problems, *see id.* art. 1, para. 3; art. 55(b), and to secure human rights and fundamental freedoms, *see id.* art. 1, para. 3; art. 55(c). United Nations members are to work toward achieving these goals. *See id.* art. 56.

[33] International Covenant on Civil and Political Rights, *supra* note 23.

[34] *See id.* art. 7.

[35] *See id.* art. 14 ¶ 3.

[36] *Id.* art. 18 ¶ 1.

[37] *See id.* art. 21.

[38] *Id.* art. 25(b).

[39] *See id.* art. 26.

[40] *See* International Covenant on Economic, Social and Cultural Rights, *supra* note 23, art. 6, ¶ 1.

[41] *Id.* art. 11 ¶¶ 1, 2.

[42] *See id.* art. 12 ¶ 1.

[43] *See id.* art. 13 ¶ 1.

[44] *See id.* art. 15, ¶ 1(a). The human rights treaties also attempt to mitigate the harsher aspects of economic development. They do so in part by describing the quality of human life that is expected to occur with economic development. Because these rights are said to inhere in each person, the treaties also attempt to ensure that the benefits of economic development are distributed more equitably.

[45] *See, e.g.*, European Convention for the Protection of Human Rights and Fundamental Freedoms, Nov. 4, 1950, 312 U.N.T.S. 221.

[46] The U.N. Charter recognizes that economic and social development are compatible by seeking to foster development as well as "respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion." U.N. CHARTER art 1, para. 3; *see also* HENKIN, *supra* note 28, at 191-92 ("Economic development will enable a country to better guarantee the economic and social rights of its inhabitants, will increase the resources available for that purpose and help achieve it more expeditiously. Societal develop-

emphasized education, health and related aspects of social development tend to have the best economic performance.[47]

Social and economic development, as well as peace and security, require supportive national governance. Peaceful conditions can not occur unless states behave in certain ways. Economic development requires nations to provide a stable legal and financial structure for investment and commerce.[48] Because they contain obligations by states to protect rights, the two basic human rights covenants also reflect a particular philosophy about the means by which governmental power should be exercised and the purposes of national government.[49] Parties to the International Covenant on Civil and Political Rights are obliged to treat persons according to certain rules, to adopt necessary laws and to provide effective remedies.[50] Similarly, the International Covenant on Economic, Social and Cultural Rights requires each party, "to the maximum of its available resources," to take steps "with a view to achieving progressively the full realization of the rights" stated in the convention.[51]

Perhaps the most direct international assertion about development before UNCED is found in the 1986 Declaration on the Right to Development, when the U.N. General Assembly recognized an "inalien-

---

ment is essential for individual development which is necessary to enable individuals to know their rights, to claim them, to realize and to enjoy them and the human dignity they promise.").

[47] *See* UNITED NATIONS DEVELOPMENT PROGRAMME, HUMAN DEVELOPMENT REPORT 1996 at 1-10 (1996) [hereinafter HUMAN DEVELOPMENT REPORT 1996]; James D. Wolfensohn, The Challenge of Inclusion, Address to the Board of Governors, Hong Kong, China, (Sept. 23, 1997). At the same time, it is not possible to reduce poverty without economic growth. *See id.*; *see also* Dani Rodrik, *Sense and Nonsense in the Globalization Debate*, FOREIGN POL'Y, Summer 1997, at 19, 26 ("All the available evidence points to the same, unavoidable conclusion: The social welfare state has been the flip side of the open economy."). The evidence associating respect for democracy and civil rights with economic development appears to be less clear. The remarkable economic growth in many Asian countries has occurred notwithstanding their authoritarian governance and lack of respect for civil and political rights. This has led to suggestions that these countries might develop a nondemocratic model of economic growth. *See, e.g.*, Donald K. Emmerson, *Americanizing Asia?*, FOREIGN AFF., May/June 1998, at 46. The 1997-98 Asian financial crisis called those suggestions into question. A study of nine East Asian countries suggests that those with the greatest political freedom were also those best able to withstand the financial crisis. *See id.* at 52-53. Others, however, argue that "what distinguishes the unscathed from the damaged is not political democracy but good governance of the economy." *Id.* at 54.

[48] When it intervenes in a particular country, for example, the International Monetary Fund imposes specific restrictions on the way that country's economy is managed. *See* Martin Feldstein, *Refocusing the IMF*, FOREIGN AFF., Mar./Apr. 1998, at 20.

[49] HENKIN, *supra* note 28, at 8-10.

[50] International Covenant on Civil and Political Rights, *supra* note 23, art. 2, ¶¶ 2, 3. However, many of these rights can be derogated during a "public emergency which threatens the life of the nation." *Id.* art. 4, ¶ 1.

[51] International Covenant on Economic, Social and Cultural Rights, *supra* note 23, art. 2, ¶ 1. As the language indicates, the need for financial and other resources is the evident reason for a different implementation process than that in the International Covenant on Civil and Political Rights.

able human right" to development.[52] The Declaration describes development as a comprehensive process that involves political freedoms and "equality of opportunity for all in their access to basic resources, education, health services, food, housing, employment and the fair distribution of income."[53] Each human being, the Declaration states, is "entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized."[54] The claim of a right instead of a goal underscores the perceived centrality of development to human dignity and well-being.[55]

The Declaration expressly refers to peace, economic development, social development and supportive national governance as the basic foundations for development. It recognizes that "international peace and security are essential" to development.[56] In addition, it seeks "to promote more rapid development of developing countries," [57] makes several references to economic development or economic rights, and encourages international cooperation for development,[58] although it

---

[52] *Declaration on the Right to Development*, G.A. Res. 41/128, U.N. GAOR, 41st Sess., Annex, Supp. No. 53, at 186, art. 1, ¶ 1, U.N. Doc. A/41/53 (1987). The resolution also calls for accelerated development in developing nations. *Id.* art. 4, ¶ 2; *see also* Hector Gros Espiell, *The Right of Development as a Human Right*, 16 TEX. INT'L L.J. 189 (1981); Maria Magdalena Kenig-Witkowska, *The UN Declaration on the Right to Development in the Light of its Travaux Preparatoires*, *in* INTERNATIONAL LAW AND DEVELOPMENT 381 (Paul de Waart et al. eds., 1988); L. Amede Obiora, *Beyond the Rhetoric of a Right to Development*, 18 L. & SOC'Y REV. 355 (1996); Roland Rich, *The Right to Development: A Right of Peoples?*, *in* THE RIGHTS OF PEOPLES 39 (James Crawford ed., 1988).

The claim for a right to development is not universally accepted, although resistance appears to be weakening. The United States voted against the Declaration and some other developed countries abstained, stating among other things that development is better understood as a goal and that the right to development might be used as an excuse to ignore human rights. *See* 1986 U.N.Y.B. 719-21, U.N. Sales No. E.90.I.1 (summarizing reservations of United States and other countries).

Since 1993, the U.S. appears to have dropped its resistance to a right to development, but only as an individual right to develop to one's full potential, not "as a right of states to demand foreign assistance" or limit human rights. *See* Gregory Maggio & Owen J. Lynch, Human Rights, Environment, and Economic Development: Existing and Emerging Standards in International Law and Global Society 25 (Nov. 15, 1996) (unpublished manuscript, on file with author). As U.S. concerns suggest, there remain significant questions about the right to development, including whether it is a right of states or individuals, whether it differs from the sum of all human rights and whether it should even be recognized. *See id.* at 24.

[53] G.A. Res. 41/128, *supra* note 52, art. 8, ¶ 1.

[54] *Id.* art. 1, ¶ 1.

[55] *See* HENKIN, *supra* note 28, at 193 ("Development . . . requires giving the villager as well as the city dweller a sense of personhood, worth, dignity. . . . [T]here can be no freedom, no dignity without development."). Rights trump mere goals. To assert a right to something is to say that there is a moral entitlement to it that must be "translated into and confirmed as legal entitlement in the legal order of a political society." *Id.* at 3. To assert that something is a goal is to suggest that it must be "earned or deserved," or that it is based on an "appeal to grace, or charity, or brotherhood, or love." *Id.*

[56] G.A. Res. 41/128, *supra* note 52, pmbl. ¶ 11; *see also id.* pmbl. ¶¶ 5, 12; *id.* arts. 3, 7.

[57] *Id.* art. 4, ¶ 2.

[58] *See id.* arts. 1, ¶ 1 (economic development); *id.* arts. 6, ¶ 2; 6, ¶ 3 (economic rights); *id.* arts. 3, ¶¶ 2, 3; 4, ¶ 2 (international cooperation).

does not specifically refer to the economic treaties or the institutions they created. The Declaration also emphasizes the realization of human rights as a basic necessity for development, specifically identifying the two human rights covenants.[59] Finally, it acknowledges that states have the primary responsibility for creating conditions favorable to development.[60]

A major feature of this orientation to development has been developed countries' provision of financial and technical assistance to developing countries. Countries have provided this assistance through institutions such as the World Bank and the U.N. Development Programme as well as through direct assistance to individual countries. Since 1970, the United Nations has suggested that developed countries aim for official development assistance in the amount of 0.7% of their gross national product.[61]

B. Failure: Environmental Degradation and Poverty

The world's economy "has grown with unprecedented speed" since World War II, and most people have experienced a rise in their standard of living.[62] Yet the traditional development model has foundered for two related reasons: growing poverty and a deteriorating global environment.

A growing number of people live in hunger and poverty, and the gap between rich and poor continues to widen.[63] More than a third of the world's population lacks access to a safe water supply.[64] Health

---

[59] *See id.* pmbl. ¶¶ 3, 4, 7-10, 15; *id.* arts. 1; 5; 6; 8, ¶ 2; 9. The declaration also refers separately to the social development purpose of the U.N. Charter. *See id.* pmbl. ¶ 1.

[60] *See id.* pmbl. ¶ 14, arts. 8, ¶ 1; 2, ¶ 3. The Declaration also asserts that they should be able to do so without foreign interference. *See id.* pmbl. ¶ 9, art. 5; *see also* Charter of the Organization of American States, April 30, 1948, 2 U.S.T. 2394, *reprinted with amendments in* 33 INT'L LEGAL MATERIALS 981, art. 44 (1994) (identifying these four components as essential for human quality of life).

[61] *See* G.A. Res. 2626, 25 U.N. GAOR, 25th Sess., Supp. No. 28, ¶ 43, U.N. Doc. A/8028 (1970); *see also* Roland Y. Rich, *The Right to Development as an Emerging Human Right*, 23 VA. J. INT'L L. 287, 303-06 (1983) (tracing history of official development assistance from developed to developing countries).

[62] *See Global Change and Sustainable Development: Critical Trends, Report of the Secretary-General*, U.N. Commission on Sustainable Development, 5th Sess. ¶ 159, U.N. Doc. E/CN.17/1997/3 (1997) [hereinafter *Global Change and Sustainable Development*]. Between 1960 and 1993, for example, life expectancy in developing countries increased from 46 to 62 years; between 1970 and 1993, the adult literacy rate in those countries increased from 43% to 61%. *See* HUMAN DEVELOPMENT REPORT 1996, *supra* note 47, at 18, 22.

[63] *See* GLOBAL ENVIRONMENTAL OUTLOOK, *supra* note 5, at 10. The income ratio for the richest 20% has doubled in the past 30 years, going from 30:1 to 61:1. *See* HUMAN DEVELOPMENT REPORT, *supra* note 47, at 2. Global gross domestic product in 1993 was $23 trillion. Only $5 trillion of this amount was accounted for by developing countries, even though they have 80% of the world's population. *See id.* During the 1990s, the incomes of more than 1.5 billion people have decreased. *See Global Change and Sustainable Development*, *supra* note 61, ¶ 159.

[64] *See* GLOBAL ENVIRONMENTAL OUTLOOK, *supra* note 5, at 4. Some 25,000 people die each day because of poor water quality. *See id.* More than three billion people do not have

risks from the degradation of natural resources and the improper use of chemicals also are increasing.[65] At the beginning of the next century, more than half of the world's population will live in urban areas, and mostly without adequate housing and sanitation.[66]

Unfortunately, the condition of the global environment is also deteriorating.[67] Among other things, we face widespread and even accelerating extinction of plant and animal species, growing emissions of greenhouse gases into the atmosphere, the depletion of fish stocks in oceans throughout the world, loss of farmland and grazing land through overuse and poor practices, and growing and improper use of chemicals.[68] In every region in the world, these conditions are deepening.[69] Despite some positive efforts since UNCED, "the state of the global environment has continued to deteriorate."[70]

These are large, even overwhelming, problems, and they are getting worse. The world's growing population, now estimated at 5.7 billion, will likely level off at about twice its present size, 10 billion, by 2050.[71] In the same period, the global economy will grow to between four and five times its present size.[72] Although current problems are unlikely to become ten times worse by the middle of the 21st century, the basic direction in which conditions are heading is obvious.

---

access to basic sanitation. *See Global Change and Sustainable Development, supra* note 62, ¶ 132.

[65] *See* GLOBAL ENVIRONMENTAL OUTLOOK, *supra* note 5, at 10.

[66] *See* WORLD RESOURCES INSTITUTE ET AL., WORLD RESOURCES 1996-1997, at 1-25 (1996).

[67] *See generally* WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW § 1.1 (2d ed. 1994 & supp. 1998) (summarizing data on global environmental conditions and collecting sources); AL GORE, EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT (1992) (describing global environmental crisis and making recommendations).

[68] *See* GLOBAL ENVIRONMENTAL OUTLOOK, *supra* note 5, at 10; *see also* WORLD RESOURCES 1996-1997, *supra* note 66, at 201-313.

[69] *See* GLOBAL ENVIRONMENTAL OUTLOOK, *supra* note 5, at 1.

[70] *Programme for the Further Implementation of Agenda 21, supra* note 5, ¶ 9. In the five years following UNCED, human population grew by 450 million; about 1.3 billion people are without adequate food or shelter. *See* Christopher Flavin, *The Legacy of Rio, in* STATE OF THE WORLD 1997, at 3 (Lester R. Brown et al. eds., 1997). Global carbon emissions were 6.25 billion tons in 1996, a record high; an estimated 100,000 plant and animal species became extinct in these five years; and global forest loss continues unabated. *See* Scherr, *supra* note 6, at 2-3.

[71] *See* WORLD RESOURCES 1996-1997, *supra* note 66, at 173; *Global Change and Sustainable Development, supra* note 61, ¶¶ 18-41. The expected range for 2050 is between 7.9 and 11.9 billion. *See* WORLD RESOURCES 1996-1997, *supra* note 66, at 173.

[72] *See* WORLD RESOURCES INSTITUTE ET AL., RESOURCE FLOWS: THE MATERIAL BASIS OF INDUSTRIAL ECONOMIES iv-v (1997). The global economy has grown nearly fivefold in the past 45 years. *See Overall Progress Achieved Since the United Nations Conference on Environment and Development, Report of the Secretary-General, Changing Consumption Patterns (Chapter 4 of Agenda 21)*, U.N. Commission on Sustainable Development, 5th Sess., at 3, U.N. Doc. E/CN.17/1997/2/Add.3 (1997).

These problems are complicated by the increasing globalization of the economy, a phenomenon that has become particularly prominent since UNCED. Globalization is fostered by advances in information technology and transportation as well as treaty-driven trade liberalization over the past several decades. Private transfers of funds from developed countries grew from $44 billion to more than $240 billion between 1990 and 1996. Official development assistance or foreign aid from governments represented more than half of the capital flowing to developing countries at the beginning of this period but less than a fifth at the end.[73] Although the extent to which globalization has penetrated national economies is disputed,[74] its effect has been to facilitate the flow of capital around the world for trade, investment and production. Globalization has greatly contributed to economic and social development in some countries, but other countries and regions are being left behind, further widening the gap between the rich and poor.[75] The influx of investment capital may foster environmental protection in some countries, but international competition for capital may make it even harder for other countries to successfully address environmental degradation and poverty.

The global scale and severity of environmental degradation and poverty are unprecedented in human history. Major adverse consequences are not inevitable, but they are likely if these problems are not addressed. Many civilizations collapsed or were severely weakened because they exhausted or degraded the natural resource base on which they depended.[76] In addition, substantial economic and social inequalities have caused or contributed to many wars and revolutions.[77] These problems are intensified by the speed at which they have occurred and are worsening, making it difficult for natural systems to adapt. The complexity of natural and human systems also means that the effects of these problems are difficult to anticipate. The potential impact of global warming on the transmission of tropical diseases in a time of substantial international travel and commerce is but one example.

---

[73] *See* THE WORLD BANK, PRIVATE CAPITAL FLOWS TO DEVELOPING NATIONS 9-10 (1997) [hereinafter PRIVATE CAPITAL FLOWS] (outlining the history and recent changes in distribution of public and private aid to developing countries); Hilary F. French, *Pay for Development*, WORLD WATCH, May/June 1997, at 9.

[74] *Compare, e.g.*, Rodrik, *supra* note 47, at 19, 21 (stating that despite globalization trend, "national economies remain remarkably isolated from each other") *with* WILLIAM GREIDER, ONE WORLD, READY OR NOT: THE MANIC LOGIC OF GLOBAL CAPITALISM (1997) (finding that globalization is already having profound effects on national economies).

[75] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 7.

[76] *See* CLIVE PONTING, A GREEN HISTORY OF THE WORLD: THE ENVIRONMENT AND THE COLLAPSE OF GREAT CIVILIZATIONS (1991).

[77] *See, e.g., id.*

C. New Model: Sustainable Development

1. Stockholm and After

Environmental protection as an international objective is more recent in origin than development. The first major global conference on the environment, the United Nations Conference on the Human Environment in 1972, grew out of concern for growing environmental degradation around the world.[78] The Stockholm conference, and the preparatory meetings that led to it, produced "a worldwide raising of consciousness" about the environment "for which there appears to be no precedent," reinforced national responsibility for environmental protection, officially recognized the need for cooperative international action and began to bring the environment into the discussion of what development means.[79] The conference also led to the adoption and implementation of environmental laws in many countries,[80] and to a rapid increase in the number and variety of treaties concerning protection of the environment.[81] It did not, however, suggest a way to reconcile development and environment.

The conference produced a declaration of twenty-six principles, known as the Stockholm Declaration, "to inspire and guide the peoples of the world in the preservation and enhancement of the human environment."[82] Perhaps the single most important principle couples the sovereign right of nations to exploit their own resources with responsibility "to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."[83] This principle as-

---

[78] International conferences on conservation of national resources had taken place earlier. For example, the 1949 U.N. Conference on the Conservation and Utilization of Resources was held to exchange information on conservation methods, costs and benefits. *See* Sands, *supra* note 4, at 307-08. "[E]ven at this early stage the relationship between conservation and development emerged as a central theme." *Id.* at 308.

[79] *See* LYNTON KEITH CALDWELL, INTERNATIONAL ENVIRONMENTAL POLICY: FROM THE TWENTIETH TO THE TWENTY-FIRST CENTURY 61, 67-68, 70-74 (3d ed. 1996).

[80] *See* Peigi Wilson et al., *Emerging Trends in National Environmental Legislation in Developing Countries, in* UNEP'S NEW WAY FORWARD: ENVIRONMENTAL LAW AND SUSTAINABLE DEVELOPMENT 185, 186 (Sun Lin ed., 1995). UNEP is the United Nations Environmental Programme.

[81] *See* Edith Brown Weiss, *International Environmental Law: Contemporary Issues and the Emergence of a New World Order*, 81 GEO. L.J. 675, 678-79 (1993).

[82] *Report of the United Nations Conference on the Human Environment,* Declaration of the United Nations Conference on the Human Environment, U.N. Doc. A/CONF.48/14/Rev.1, at 3 (pmbl.) (1972) [hereinafter *Human Environment*]; *see also* Marc Pallemaerts, *International Environmental Law from Stockholm to Rio: Back to the Future?, in* GREENING INTERNATIONAL LAW, *supra* note 27, at 2 ("[The Stockholm Declaration] is generally regarded as the foundation of modern international environmental law."); Louis B. Sohn, *The Stockholm Declaration on the Human Environment,* 14 HARV. INT'L L.J. 423 (1973) (explaining negotiation history of declaration).

[83] Stockholm Declaration, *in Human Environment, supra* note 82, at 5 (quoting princ. 21).

serts both the need for environmentally protective economic development and the interdependence of nations.[84] The Stockholm Declaration also recognizes the relationship between development and environment by stating, among other things, that "[e]conomic and social development is essential for ensuring a favorable living and working environment for man,"[85] and that the "environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries."[86] The Stockholm conference also created a relatively brief action plan.[87] Although it contained a section on development and environment, the plan contained no comprehensive approach to reconciling the two concepts.[88]

During the 1980s, it became more evident that development was imposing massive economic, human and environmental costs.[89] The United Nations General Assembly formed the World Commission on Environment and Development to examine the relationship between development and the environment. The Commission, which was headed by Norwegian Prime Minister Gro Harlem Brundtland, issued its report, *Our Common Future*, in 1987.[90] Although the "satisfaction of human needs and aspirations is the major objective of development,"[91] the Commission concluded, developmental inequity and environmental degradation are "inexorably linked."[92]

---

[84] *See* Sands, *supra* note 4, at 309.

[85] Stockholm Declaration, *in Human Environment*, *supra* note 82, at 4 (quoting princ. 8).

[86] *Id.* (quoting princ. 11); *see also id.* (princs. 1, 13); Sohn, *supra* note 82, at 451-55, 472-73 (demonstrating that many of the principles outlined in the Stockholm Declaration are interrelated and address similar tenets).

[87] *See Human Environment*, *supra* note 82, at 6-28.

[88] *See id.* at 25-27. Instead, its recommendations mostly concern interdisciplinary research and training, trade and the environment, and financial and technical assistance to developing countries. *See id.* The United Nations Environment Programme was created shortly afterward, charged with promoting international cooperation, providing policy guidance and reviewing information about global environmental conditions. *See* G.A. Res. 2997, U.N. GAOR, 27th Sess., Supp. No. 30, at 43, U.N. Doc. A/8370 (1973).

[89] *See* Mathews, *supra* note 10, at 24.

[90] WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE (1987) [hereinafter OUR COMMON FUTURE]. *See generally* INDEPENDENT COMMISSION ON INTERNATIONAL DEVELOPMENT ISSUES, NORTH-SOUTH: A PROGRAM FOR SURVIVAL (1990) (offering similar conclusions concerning relationship between environment and development). The Brundtland Commission drew many ideas from INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES, THE WORLD CONSERVATION STRATEGY: LIVING RESOURCE CONSERVATION FOR SUSTAINABLE DEVELOPMENT (1980); *World Charter for Nature*, U.N. GAOR, 37th Sess., Supp. No. 51, at 17, U.N. Doc. A/37/51, *reprinted in* 22 INT'L LEGAL MATERIALS 455, 457 (1983) (stating "principles of conservation by which all human conduct affecting nature is to be guided and judged"). For a reasonably complete (but critical) history of the origin of sustainable development, see W.M. ADAMS, GREEN DEVELOPMENT: ENVIRONMENT AND SUSTAINABILITY IN THE THIRD WORLD 14-65 (1990).

[91] OUR COMMON FUTURE, *supra* note 90, at 43 ("The essential needs of vast numbers of people in developing countries—for food, clothing, shelter, jobs—are not being met, and beyond their basic needs these people have legitimate aspirations for an improved quality of life.").

[92] *Id.* at 37.

More specifically, the Brundtland Commission found that the four basic components of development—peace and security, economic development, social development and proper governance—require environmental protection. Peace and security are related to the condition of the environment in many ways. Environmental stresses can lead to military conflicts over scarce resources. Weapons of mass destruction, particularly nuclear weapons, can have catastrophic impacts on the environment. Money spent on arms is money that does not meet basic human needs, including drinking water and sanitation.[93]

In addition, national economic development objectives lead to the destruction or degradation of natural systems, thus limiting the scope and duration of that development.[94] In sector after sector, the pattern is the same.[95] Unsustainable agricultural practices, for example, contribute to desertification and cause soil erosion, loss of soil fertility and groundwater pollution.[96] Such practices limit the availability of land for agriculture even though a growing population will require more food.[97] Similarly, the destruction of tropical forests and other habitats for agriculture, logging and other economic activities could lead to the loss of a third or more of all existing plant and animal species. Yet genetic material from such species can help make agricultural plants more disease-resistant, and has substantial but largely untapped potential to provide medicines and other products.[98] The use of fossil fuels such as coal and oil for energy is adding greenhouse gases to the environment; threatening to raise sea levels and inundate coastal areas; and also threatening to affect agriculture, forests and ecosystems in significant but unknown ways.[99]

Social development suffers when people can no longer earn a living by farming, fishing or similar activities because of environmental degradation. Population growth intensifies pressure on resources such as grasslands and forests, making it difficult for them to grow back before they are used again.[100] Developing countries' economies tend to depend on exports of agricultural products, timber, minerals

---

[93] *See id.* at 290-307.

[94] *See, e.g., id.* at 4-8, 37-38, 122-23, 152-54 (discussing the many factors that link economic development and the environment).

[95] A recent report by the U.N. Commission on Sustainable Development reinforces this conclusion: "Rapid and continuous degradation of the natural resource base, on which economic activity and life itself depend, may constitute the most serious of all threats to human well-being in the future." *Global Change and Sustainable Development, supra* note 62, ¶ 198. Governmental policies, it added, are a major part of the problem. *See infra* notes 268 to 269 and accompanying text.

[96] OUR COMMON FUTURE, *supra* note 90, at 122-28.

[97] *See id.* at 128-30 (discussing the need for rapid increase in food production).

[98] *See id.* at 150-57.

[99] *See id.* at 74-75.

[100] *See id.* at 29-31.

and other natural resources. Such exportation contributes to environmental degradation as well as displacement of local people who have traditionally used those resources to meet their own needs.[101]

These relationships between development and the environment have profound implications for governance.[102] Quite simply, effective governance requires a nation to consider and protect the environment and natural resources on which its current and future development depend. Any other approach is self-defeating. The connections between the environment and development thus provide a powerful rationale for environmental protection: enlightened self-interest.

No nation faces these challenges alone. Environmental problems and poverty occur in all states. Pollution also crosses national lines. Social or political instability in one country can produce an outpouring of refugees to other countries, creating environmental and economic stresses. In consequence, each country's interests are bound up with those of the rest of the world, and each country is more likely to resolve its problems if it works cooperatively with other countries toward their resolution.[103]

The futures of developed and developing countries are inseparable. Developed countries have tended to be primarily interested in global environmental problems, recognizing that their high level of economic development is responsible for most of these stresses. Developing countries have tended to be primarily interested in development because they see it as a way of escaping poverty. Yet conventional development uses additional raw materials and energy, and creates pollution. It thus puts greater pressure on ecosystems and natural resources, the integrity of which humans require for survival.[104] To the extent that ecological carrying capacity imposes barriers on development, developing countries appear to have only two choices, and both are unattractive. They can develop and thereby threaten ecosystems on which development depends, or they can refrain from developing and thus accept poverty.

Sustainable development is intended to provide a third choice—for both developed and developing countries—that blends environmental protection and equity. As the Brundtland Commission stated, in providing what is perhaps the best known expression of the term, "[s]ustainable development is development that meets the needs of

---

[101] *See id.* at 29.

[102] For example, inequitable development can lead to political instability, and lack of access by many groups to the political system contributes to both environmental degradation and the lack of economic development. *See id.* at 38 ("It could be argued that the distribution of power and influence within society lies at the heart of most environment and development challenges.").

[103] *See id.* at 38-41 (suggesting the need for a multinational approach to sustainable development).

[104] *See id.* at 31-33.

the present without compromising the ability of future generations to meet their own needs."[105] The Commission made a detailed series of proposals to foster sustainable development and a recommendation that implementation "begin now."[106]

2. *Rio and After*

The 1992 United Nations Conference on Environment and Development was held as a response to *Our Common Future*. As its name suggests, UNCED was not just a sequel to the 1972 Stockholm Conference on the Human Environment; it represented a concerted effort to synthesize and integrate environment and development issues. Like Stockholm, Rio's key documents are a statement of principles and a plan of action.[107] For the first time, the international community endorsed sustainable development. Sustainable development changes the prior approach to development, which called for peace and security, economic development, human rights and supportive national governance, by adding a fifth element, protection of the environment.[108] In so doing, it endorsed a framework that could profoundly affect development, particularly economic development.

The delegates to UNCED approved the Rio Declaration on Environment and Development, a statement of twenty-seven principles for sustainable development.[109] One of these principles reflects this synthesis by asserting the importance of equitably fulfilling the "developmental and environmental needs of present and future genera-

---

[105] *Id.* at 43. The Commission added: "[Sustainable development] contains within it two key concepts: the concept of 'needs,' in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs." *Id.*

[106] *Id.* at 343.

[107] The delegates also approved a separate statement of principles concerning the sustainable management of forests. *See Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*, U.N. Conference on Environment and Development, UNCED Doc. A/CONF.151/6/Rev. 1 (1992), *reprinted in* 31 INT'L LEGAL MATERIALS 881 (1992).

[108] *See, e.g., An Agenda for Development: Report of the Secretary-General*, U.N. GAOR, 48th Sess., Agenda Item 91, U.N. Doc. A/48/935 (1994) (identifying these as the five components of development); *see also* PRINCIPLES, *supra* note 15, at 208 (sustainable development means "the acceptance, on environmental protection grounds, of limits placed upon the use and exploitation of natural resources").

[109] *See* Rio Declaration, *supra* note 3; *see also* Jeffrey D. Kovar, *A Short Guide to the Rio Declaration*, 4 COLO. J. INT'L ENVTL. L. & POL'Y 119 (1993) (offering perspective of U.S. State Department attorney who participated in drafting of Rio Declaration); Ileana M. Porras, *The Rio Declaration: A New Basis for International Cooperation*, *in* GREENING INTERNATIONAL LAW, *supra* note 27, at 20, 20-33 (offering perspective of legal advisor to Costa Rican delegation at UNCED).

tions."[110] Some of these principles also are contained, in slightly different form, in the Stockholm Declaration.[111]

More important than the Rio Declaration, however, is Agenda 21, a comprehensive international "plan of action" or blueprint for sustainable development. It represents a broad and detailed commitment by nations around the world to take actions to further sustainable development. Agenda 21 is based to a great extent on the application, in particular contexts, of the principles stated in the Rio Declaration. The Agenda 21 commitment is not binding in international law, but it does represent a political commitment. Agenda 21 meant, and continues to mean, that the real work of UNCED is to occur in each country. The success or failure of UNCED, in short, ultimately depends on implementation of Agenda 21.

Agenda 21 is divided into four sections and a total of forty chapters. The sections concern social and economic issues, conservation and management of natural resources, the role of major groups and the means of implementation. Representative chapters within these sections concern poverty, production and consumption patterns, combating deforestation, management of sewage and solid wastes, the role of nongovernmental organizations, the role of business and industry, science for sustainable development and information for decision-making. Each chapter describes the factual basis for recommended actions, the objective of those actions, the particular activities that governments and others should take and the entities that need to support and fund these activities.

Agenda 21's comprehensiveness provides a way of determining whether a particular government is doing all it can to foster sustainable development. The forty chapters, many of which are divided into subchapters, as well as the variety of recommended actions in each chapter or subchapter, provide a comprehensive inventory of activities necessary for sustainable development. Agenda 21 also provides context-specific meaning for sustainable development. By identifying what sustainable development means for specific economic sectors (e.g., agriculture), natural resources (e.g., forestry) and problems (e.g., solid waste, production and consumption patterns), Agenda 21 provides a better point of departure than abstract formulas.

---

[110] Rio Declaration, *supra* note 3, princ. 3.

[111] *Compare, e.g., id.* princ. 2, *with* Stockholm Declaration, *in Human Environment, supra* note 82, princ. 21. For comparisons of the Rio and Stockholm Declarations, see, for example, Ranee Khooshie Lal Panjabi, *From Stockholm to Rio: A Comparison of the Declaratory Principles of International Environmental Law*, 21 DENV. J. INT'L L. & POL'Y 215 (1993); Pallemaerts, *supra* note 82; and David A. Wirth, *The Rio Declaration on Environment and Development: Two Steps Forward and One Back, or Vice Versa?*, 29 GA. L. REV. 599 (1995). *See also* Alexandre S. Timoshenko, *From Stockholm to Rio: The Institutionalization of Sustainable Development, in* SUSTAINABLE DEVELOPMENT AND INTERNATIONAL LAW 143 (Winfried Lang ed., 1995) (tracing institutional evolution of sustainable development from before Stockholm to after Rio).

Agenda 21 also is more specific and detailed than the Stockholm plan, thus providing a more insightful approach to reconciling development and environmental goals.

Agenda 21 established a process for reviewing the progress of individual nations in achieving sustainable development. Each year after 1992, the Commission on Sustainable Development (CSD), a newly created entity which is part of the United Nations system, was to review overall implementation of Agenda 21.[112] In addition, Agenda 21 recommended a comprehensive review by the U.N. General Assembly for 1997.[113]

In the years immediately following UNCED, there were separate international conferences on social development,[114] women,[115] population and development,[116] human settlements,[117] food[118] and other issues.[119] Each of them produced reports that, in varying ways, restated or elaborated on themes contained in Agenda 21 or the Rio Declaration. When the General Assembly met in June 1997 to perform the comprehensive five-year review of progress since UNCED, its Programme for the Further Implementation of Agenda 21 incorporated major conclusions from those conferences.[120]

In addition to reaffirming the UNCED commitment to Agenda 21, the 1997 General Assembly meeting slightly modified the process for implementation review. The CSD will continue to meet annually to review progress, but its reviews will focus more on particular issues

---

[112] *See* Agenda 21, *supra* note 1, ¶¶ 38.11, 38.13. *See generally Programme for the Further Implementation of Agenda 21*, *supra* note 5; *Report on the Fourth Session*, U.N. ESCOR 1996, 4th Sess., Supp. No. 8, U.N. Doc. E/1996/28 (April 18-May 3, 1996) [hereinafter 1996 CSD Report]; *Report on the Third Session*, U.N. ESCOR 1995, 3rd Sess., Supp. No. 12, U.N. Doc. E/1995/32 (1995) [hereinafter 1995 CSD Report]; UNITED NATIONS COMMISSION ON SUSTAINABLE DEVELOPMENT, ACTION 1994 (1994) [hereinafter 1994 CSD Report]; UNITED NATIONS COMMISSION ON SUSTAINABLE DEVELOPMENT, ACTION 1994 (1993) [hereinafter 1993 CSD Report].

[113] *See* Agenda 21, *supra* note 1, ¶ 38.9.

[114] *See Report of the World Summit for Social Development*, U.N. Doc. A/CONF.166.9 (1995) (Copenhagen, Mar. 6-12, 1995).

[115] *See Report of the Fourth World Conference on Women*, U.N. Doc. A/CONF.177/20 (1995) (Beijing, Sept. 4-15, 1995).

[116] *See Report of the International Conference on Population and Development*, U.N. Doc. A/CONF.171.13 (1994) (Cairo, Sept. 5-13, 1994).

[117] *See Report of the United Nations Conference on Human Settlements (Habitat II)*, U.N. Doc. A/CONF.165/14 (1996) (Istanbul, June 3-14, 1996).

[118] *See Report of the World Food Summit*, U.N. Doc. WFS/96/REP, pt. 1 (1996) (Rome, Nov. 13-17, 1996).

[119] *See Agenda for Development*, *supra* note 31, ¶ 34 (identifying these and other conferences).

[120] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶¶ 23-115; *see also* James C.N. Paul, *The United Nations and the Creation of an International Law of Development*, 36 HARV. INT'L L.J. 307, 319-26 (1995) (summarizing principles that have emerged from these and other conferences, and emphasizing self-determination, proper governance, human rights and environmental protection as essential parts of the "law of development").

and less on overall implementation. The next comprehensive General Assembly review is scheduled for 2002.[121]

As important as these agreements are, the synthesis they contain is a fragile one. The power and the continuing independence of development are manifest in several ways. The right to development was reaffirmed at UNCED, for example, with no corresponding claim about a right to a decent environment; rhetorically, protection of the environment does not reach the level of a "right."[122] Many international agreements concerning economic development, particularly those related to trade, do not reflect a commitment to sustainable development.[123] Another manifestation of this fragility is the 1997 Agenda for Development, a General Assembly resolution passed just before the special General Assembly meeting that performed the five-year review.[124] The Agenda for Development sets out a "new framework for international cooperation" concerning development.[125] Although it reaffirms the importance of sustainable development and the basic international agreements concerning it,[126] the Agenda for Development also provides a detailed program for achieving social and economic development.[127] Because it was adopted separately and includes a more complete program for social and economic development than the sustainable development texts, the Agenda for Development suggests that the sustainable development synthesis is not fully realized, even among delegations to the United Nations. The Agenda for Development also indicates that the international understanding of sustainable development is shaped by agreements other than those specifically pertaining to sustainable development.

D. Purposes of Sustainable Development

Sustainable development modifies the purposes of conventional development by adding a wide range of environmental protection goals, by incorporating the environment into social goals, and by insisting that economic goals be compatible with environmental protec-

---

[121] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 137.

[122] *See* Rio Declaration, *supra* note 3, princ. 3 ("The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."); Wirth, *supra* note 100, at 613-18 (discussing UNCED's failure to provide for an individual's right to a decent environment). *But see* Rio Declaration, *supra* note 3, princ. 1 (stating that human beings "are entitled to a healthy and productive life in harmony with nature").

[123] *See generally infra* notes 450-66 and accompanying text.

[124] *See Agenda for Development*, *supra* note 30. The Agenda for Development was adopted Friday, June 20, 1997. The Special Session for review of UNCED was held the following week, June 23-27. *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 1.

[125] *See Agenda for Development*, *supra* note 30, ¶ 42.

[126] *See id.* ¶¶ 141-54.

[127] *See id.* ¶ 2. It emphasizes the importance of democratic governance and respect for human rights to such development, and urges the full participation of women in society. *Id.*

tion. It also modifies the purposes of development by recognizing the present generation's responsibility to future generations.

1. Environmental and Development Goals

The Rio Declaration affirms the premise of development that every human being is "entitled to a healthy and productive life," but it adds "in harmony with nature."[128] To ensure that, nations must make simultaneous progress toward environmental and development goals.

This synthesis builds on, but profoundly changes, the pre-existing approach to development, which tolerated environmental degradation. It does this by making environmental protection and even restoration equal in importance to the other components of development, and by combining environmental and development goals. Sustainable development depends on the presence of peace and security in an international system of sovereign states, but peace and security cannot occur without sustainable development.[129] Sustainable development also includes social development. As the Rio Declaration states, the core goal of development, and an "indispensable requirement for sustainable development," is the eradication of poverty.[130] The Rio Declaration is even supportive of economic development, calling on nations "to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries."[131] As the Agenda for Development and the Programme for the Further Implementation of Agenda 21 both state: "Economic development, social development and environmental protection are in-

---

[128] Rio Declaration, *supra* note 3, princ. 1; *see also* OUR COMMON FUTURE, *supra* note 90, at 41 ("[E]very human being—those here and those who are to come—has the right to life, and to a decent life."); *Agenda for Development*, *supra* note 31, ¶ 44 ("The goal of development is the improvement of human well-being and the quality of life.").

[129] *See Agenda for Development*, *supra* note 31, ¶¶ 3, 4; *see also* Rio Declaration, *supra* note 3, princ. 24 ("Warfare is inherently destructive of sustainable development."); *id.* princ. 25 ("Peace, development and environmental protection are interdependent and indivisible."); *id.* princ. 26 ("States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.").

[130] Rio Declaration, *supra* note 3, princ. 5. Governments should thus ensure "universal access to basic social services, including basic education, health care, nutrition, clean water and sanitation." *Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 27(b); *see also* Agenda 21, *supra* note 1, ¶¶ 6.3, 18.41-18.55, 36.1-36.27 (discussing the need for health care in rural areas, a safe water supply and sanitation, and focusing on education and awareness of sustainable development). Governments should also ensure the availability of "social protection systems to support those who cannot support themselves." *Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 27(c). Combating poverty through job creation and various support services is also important; the long term goal is "[t]o provide all [people] with the opportunity to earn a sustainable livelihood." *Id.* ¶ 3.4.

[131] Rio Declaration, *supra* note 3, princ. 12. The Declaration also calls on countries to refrain from unilateral trade restrictions and to protect the environment outside their territory, and suggests that global problems be dealt with by international consensus. *Id.*

terdependent and mutually reinforcing components of sustainable development."[132]

Sustainable development would change the goals of governance in several basic ways. Most fundamentally, it would have governments protect the entire range of natural resources and ecosystems from every significant threat. A basic objective is to ensure that their use does not degrade or diminish resources. Environmental and natural resource goals are thus linked, on a resource-by-resource basis, with the use of resources to serve human needs. Some of these resources are covered under multilateral treaties, including the Framework Convention on Climate Change[133] and the Biodiversity Convention,[134] but most are not. Agenda 21's goals include protection of the atmosphere,[135] sustainable use of land and its natural resources,[136] conservation and sustainable use of forests for multiple purposes,[137] combating land degradation and fostering alternative means of earning a livelihood in desert and semidesert areas[138] and protecting mountain ecosystems while providing for alternative livelihood opportunities.[139] Agenda 21 also calls for increasing food production while conserving and rehabilitating the soil and other natural resources on which increased production depends.[140] In addition, it urges the conservation of biological diversity.[141]

Protection of the ocean environment is another goal of Agenda 21.[142] It is coupled with goals concerning sustainable use and conservation of fish, marine mammals, and other "living resources."[143] Similarly, freshwater resources are to be protected to satisfy the needs

---

[132] *Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 23; *Agenda for Development*, *supra* note 5, ¶ 1.

[133] *See* Framework Convention on Climate Change, *supra* note 9.

[134] *See* Convention on Biological Diversity, *supra* note 9.

[135] *See* Agenda 21, *supra* note 1, ¶ 9.1. Agenda 21 thus calls for reducing atmospheric impacts due to energy production, transportation, industrial development, and land use. *See id.* ¶¶ 9.9-9.21. Agenda 21 also contains goals for preventing stratospheric ozone depletion and transboundary air pollution. *See id.* ¶¶ 9.22-9.35.

[136] *See id.* ¶¶ 10.1, 10.5.

[137] *See id.* ¶¶ 11.2, 11.12.

[138] *See id.* ¶¶ 12.17, 12.27, 12.36. Two other goals are development of drought preparedness strategies, and public participation in desertification control and management programs. *See id.* ¶¶ 12.47, 12.56.

[139] *See id.* ¶ 13.15.

[140] *See id.* ch. 14. Subsidiary goals include conservation and sustainable utilization of plant and animal genetic resources, *see id.* chs. 14(G), 14(H), integrated pest management, *see id.* ch. 14(I), and sustainable use of fertilizer, *see id.* ch. 14(J).

[141] *See id.* ch. 15. To provide incentives for protection of biodiversity but also to increase food availability and improve human health, Agenda 21 promotes the environmentally sound management of biotechnology. *See id.* ch. 16.

[142] *See id.* ¶ 17.22.

[143] *See id.* ch. 17(C) (discussing marine living resources of the high seas); *id.* ch. 17(D) (discussing marine living resources under national jurisdiction). Sustainable development of small island states is another goal, partly because they are threatened by rising sea levels from global warming. *See id.* ch. 17(G).

of all countries.[144] Thus, Agenda 21 calls for protection of water quality, water quantity and aquatic ecosystems, but it links that protection to other goals for drinking water supply, sanitation, urban development and food production.[145]

Another set of goals concerns toxic chemicals and waste. Although not connected to any particular resource, these goals are relevant to the protection of many resources as well as human health. Agenda 21 thus calls for the reduction or elimination of unreasonable risks from toxic chemicals[146] and the prevention of illegal international traffic in toxic chemicals and hazardous wastes.[147] It also urges the prevention or minimization of hazardous and other wastes, the reuse and recycling of waste and the sound management of wastes that require disposal or treatment.[148]

In addition to protecting the environment, Agenda 21 recommends that governments develop necessary information and technology. Improved scientific understanding of natural systems, including human effects on those systems, is necessary to meet these objectives.[149] The creation and use of new technologies for environmental protection and human well-being are necessary as well.[150]

Sustainable development also would incorporate environmental protection into social development, thus fostering greater human well-being. Because social development can be hindered by environ-

---

[144] *See id.* ¶ 18.7.

[145] *See id.* ch. 18.

[146] *See id.* ¶ 19.48.

[147] *See id.* ¶¶ 19.68, 20.41.

[148] *See id.* ¶¶ 20.11, 20.21 (hazardous waste); *id.* ¶¶ 21.8, 21.17, 21.28 (solid waste, sewage, and other nonhazardous waste). Agenda 21 also calls for the extension of basic waste collection and disposal services, noting that more than two billion people will lack access to basic sanitation by 2000, and that half of the urban population in developing countries will lack solid waste disposal services. *See id.* ch. 21(D). The safe and environmentally sound disposal of radioactive wastes is also urged. *See id.* ¶ 22.3.

[149] *See id.* chs. 31, 35 (emphasizing importance of scientific community and scientific information). Improved scientific understanding is also a specific goal concerning, e.g., the atmosphere, *see id.* ¶ 9.7, land resources, *see id.* ¶¶ 10.14-10.15, forests, *see id.* ¶ 11.30, deserts, *see id.* ¶ 12.6, mountain ecosystems, *see id.* ¶ 13.5, effects of ultraviolet radiation on plants and animals caused by depletion of the stratospheric ozone layer, *see id.* ch. 14(L), biodiversity, *see id.* ¶¶ 15.4(e)-(f), 15.6, the marine environment, including effects of climate change, *see id.* ¶ 17.100, fresh water resources, including effects of climate change, *see id.* ¶¶ 18.24-18.25, 18.84, and the risks of toxic chemicals, *see id.* ¶ 19.13. *See also* Stockholm Declaration, *in Human Environment*, *supra* note 82, princ. 18 (stating that science and technology "must be applied . . . for the common good of mankind"). Because of our uncertain understanding of the environment, monitoring and continuing data evaluation have become a staple of recent environmental treaties. *See* Weiss, *supra* note 81, at 688-89.

[150] The importance of technology and the technological community is emphasized in Chapters 31 and 34 of Agenda 21. Agenda 21 is also replete with references to the importance of developing and disseminating new and improved technology. *See, e.g.*, Agenda 21, *supra* note 1, ¶ 9.9 (energy technologies to protect atmosphere); *id.* ch. 16 (biotechnology); *id.* ¶¶ 20.10, 20.13(b) (innovative technologies to prevent or reuse hazardous waste); *see also* Stockholm Declaration, *in Human Environment*, *supra* note 82, princ. 20.

mental degradation, social development necessarily requires protection of the environment. Human health goals thus include not only meeting primary health care needs[151] but also controlling communicable diseases[152] and reducing health risks from pollutants and related hazards.[153] For human settlements, the overall objective is to improve "social, economic and environmental quality," including water supplies, air quality, sanitation, drainage, and waste management.[154] Another objective is promoting the ongoing decline in population growth rates through a variety of means.[155]

Finally, while Agenda 21 is supportive of economic development,[156] it is based on recognition of a profound constraint, i.e., the ability of the world's natural systems to support existing production and consumption patterns. Agenda 21 reflects that constraint with its detailed program for making a variety of economic activities compatible with the environment on which they depend. But Agenda 21 also addresses the developed countries' disproportionate consumption of world resources. Each German citizen, for example, consumes as many resources as fifteen Indian citizens.[157] With 5% of the world's population, the United States in 1993 was responsible for 24% of the world's energy consumption and almost 30% of the world's raw materials consumption.[158] As Agenda 21 observes, "the major cause of the

---

[151] *See* Agenda 21, *supra* note 1, ¶¶ 6.3-6.9. UNCED's health goal in 1992 was "to achieve health for all by the year 2000," *id.* ¶ 6.4, which now seems hopelessly ambitious. Priority areas include food safety, safe drinking water and sanitation, health education, immunization, and the provision of necessary drugs. *See id.* ¶ 6.3. These health goals are particularly directed at "infants, youth, women, indigenous people, and the very poor." *Id.* ¶ 6.18; *see also id.* ¶¶ 6.18-6.31 (describing program for such persons).

[152] *See id.* ¶¶ 6.10-6.17. Major goals include the reduction or elimination of approximately one dozen specified diseases or illnesses by 1995 or 2000. *See id.* ¶ 6.12. These include cholera, HIV infection and malaria. *See id.* ¶ 6.12.

[153] *See id.* ¶¶ 6.39-6.46. Identified risks include urban and indoor air pollution, water pollution, pesticides, solid waste, health conditions in human settlements, noise, radiation, and industrial and energy facilities. *See id.* ¶ 6.41.

[154] *Id.* ¶¶ 7.4, 7.35; *see also id.* ch. 7(D) (heading).

[155] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 30. These means include "the further expansion of basic education, with full and equal access for girls and women, and health care, including reproductive health care, including both family planning and sexual health." *Id.* Even though the population growth rate is declining, the number of people continues to increase. *See supra* note 72 and accompanying text.

[156] Agenda 21 calls for trade liberalization, policies to make trade and the environment mutually supportive, financial assistance to developing countries and management of their external debt, and proper governmental management of national economies. *See* Agenda 21, *supra* note 1, ¶ 2.3. Other aspects of economic development, including the efficient use of resources and investment of economic capital, are also discernible in Agenda 21. *See, e.g., id.* ¶ 2.23; *Agenda for Development*, *supra* note 31, Annex ¶ 2 (declaring that "[s]ustained economic growth is essential"); OUR COMMON FUTURE, *supra* note 90, at 44 ("[S]ustainable development clearly requires economic growth in places where [essential] needs are not being met."). But economic growth improves human quality of life only if its benefits are shared. *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 23.

[157] *See* ERNST VON WEIZSÄCKER ET AL., FACTOR FOUR 218-19 (1997).

[158] *See* PRESIDENT'S COUNCIL ON SUSTAINABLE DEVELOPMENT, *supra* note 16, at 5, 142 n.8.

continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries."[159] A major purpose of Agenda 21 is thus reduction by developed countries of unsustainable patterns of production and consumption for energy and raw materials.[160] Achievement of this objective would profoundly change the way in which economic development occurs because it would limit the amount of new energy and materials that need to be continually extracted, and would limit the ability of humans to use nature for disposal of wastes.[161]

While it plainly emphasizes environmental protection, sustainable development does not do so at the expense of other goals. To the contrary, sustainable development is based on an understanding that a nation's wealth is the sum of its economic, social and environmental assets or capital. If a gain in one category is at the expense of another, overall national wealth is not necessarily increased and may even be reduced. These objectives, in short, should be synergistic, not antagonistic.

2. Intergenerational Equity

The principle of intergenerational equity is inherent in sustainable development and is one of its most basic justifications. The Brundtland Commission definition of sustainable development specifically includes this idea: Present development must not compromise "the ability of future generations to meet their own needs."[162] Intergenerational equity ordinarily refers primarily to the environment and natural resources.[163] The Rio Declaration formulates the princi-

---

[159] Agenda 21, *supra* note 1, ¶ 4.3; *see also* Rio Declaration, *supra* note 3, princ. 8 (urging states to eliminate such unsustainable patterns).

[160] *See* Agenda 21, *supra* note 1, ¶ 4.7(a).

[161] *See* Robert Goodland, *The Concept of Environmental Sustainability*, 26 ANN. REV. ECOLOGICAL SYS. 1, 3 (1995) (stating that "[e]conomics has rarely been concerned with natural capital").

[162] OUR COMMON FUTURE, *supra* note 90, at 43. Intergenerational equity is based on the moral obligation of each generation "to future generations to pass on the natural and cultural resources of the planet in no worse condition than received and to provide reasonable access to the legacy for the present generation." EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENRATIONS: INTERNATIONAL LAW, COMMON PATRIMONY, AND INTERGENERATIONAL EQUITY 37, 38 (1989); *see also* AVNER DE-SHALIT, WHY POSTERITY MATTERS: ENVIRONMENTAL POLICIES AND FUTURE GENERATIONS (1995) (dealing with intergenerational justice as a "moral basis for environmental policies"); Anthony D'Amato, *Do We Owe a Duty to Future Generations to Preserve the Global Environment?*, 84 AM. J. INT'L L. 190, 198 (1990) (urging protection of the environment even though it may be difficult to determine the exact impact on future generations); Edith Brown Weiss, *Our Rights and Obligations to Future Generations for the Environment*, 84 AM. J. INT'L L. 198 (1990) (analyzing justifications for, and implications of, intergenerational equity).

[163] *See, e.g.*, Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion of July 8, 1996), 1996 I.C.J. No. 95, *reprinted in* 35 INT'L LEGAL MATERIALS 809, 821 (1996) (finding that the environment "represents the living space, the quality of life and the very health of human beings, including generations unborn"); *Charter of Economic Rights and Duties of States,*

ple more broadly: "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."[164] Although ambiguous, the statement can be read to mean that goals for economic development, social development, peace and security, and natural resources protection should be met for both present and future generations. Such a reading recognizes the many links between development and environment, and the implicit premise of Agenda 21 that nations should build on existing economic and social achievements.

Sustainable development thus represents an ambitious intergenerational compact. It implies a responsibility for the future that needs to be reflected in a country's legal system and institutions.[165] An emphasis on intergenerational equity is particularly important because it is no longer clear that institutions or individuals are willing or able to protect future generations.[166] Under this principle, progress toward attainment of unmet goals should continue, and the progress that already has been made should be preserved. In addition, negative trends should be reversed.

Professor Edith Brown Weiss has suggested that intergenerational goals should have three elements. Although not derived directly from the UNCED documents, they are broadly consistent with that approach. Under the first, each generation should conserve the options of future generations by conserving "the diversity of the natural and cultural resource base."[167] The second expresses both an entitlement by this generation to a quality of planet enjoyed by prior generations and an obligation to pass to the next generation a quality of planet that is no worse than it received. The third, conservation of access, requires all people in the current generation to have the same minimum level of access to this legacy. Because poverty and environmental

---

U.N. GAOR, 29th Sess., Supp. No. 31, at 50, 55, UN Doc. A/9631 (1975), *reprinted in* 14 INT'L LEGAL MATERIALS 251, 260, art. 30 (1975) ("The protection, preservation and enhancement of the environment for the present and future generations is the responsibility of all States.").

[164] Rio Declaration, *supra* note 3, princ. 3.

[165] *See* MARK SAGOFF, THE ECONOMY OF THE EARTH 63-65 (1988) (describing the paternalism that arises from such political authority as "a concern about the character of the future itself").

[166] *See* ROBERT COSTANZA ET AL., AN INTRODUCTION TO ECOLOGICAL ECONOMICS 160 (1997) (arguing that over time "modern peoples lost their sense of responsibility for their offspring and the institutions needed to assure appropriate transfers of assets"); *see also* ROBERT HEILBRONER, VISIONS OF THE FUTURE (1995). Heilbroner divides historic human attitudes toward the future into three periods. Until the end of the 18th century, people expected the future to resemble the past because there was no reason to expect anything else. *See id.* at 6-10. From the 18th century until the mid-1950s, the idea of progress led people to expect that the future would be better than the past. Three forces supported that expectation: science and technology, capitalism as a means of organizing production, and democracy. *See id.* at 41-66. At present, however, the attitude toward the future is "ambiguous, indeterminate, and apprehensive." *Id.* at 71. Each of the three identified forces has either created or allowed the creation of reasons for misgiving and doubt. *See id.* at 71-91.

[167] WEISS, IN FAIRNESS TO FUTURE GENERATIONS, *supra* note 162, at 38.

degradation are inseparably linked, equity within the current generation is necessary for equity between generations.[168] Intragenerational equity provides another way of understanding why the principle applies to both development and environment.

3. A Normative Framework

If sustainable development were simply descriptive of economic and social development over the past few centuries, the term would be internally inconsistent because development has not been environmentally sustainable.[169] The framework is normative, however; it is premised on the view that development should be—and can be—made sustainable.[170] It is quite possible that development cannot be made generally sustainable, at least development as we now understand it.[171] Indeed, sustainable development is likely to profoundly change the character of economic and social development. Because we are so accustomed to thinking about and witnessing environmental degradation as the necessary price of progress, a significant challenge is even conceiving another approach.

Fortunately, there is evidence that sustainable development is possible. Pollution-control laws in the United States and other developed countries have made cities more liveable, lakes and rivers more suitable for recreation, workplaces safer and the air healthier—even as the economies of those countries have grown.[172] In addition, many communities and businesses have been able to further environmental protection, social progress and economic development at the same time.[173] Sustainable development requires us to improve upon, and extrapolate from, these experiences.

The argument that development can not be achieved without environmental degradation is similar to the claim that economic development is inconsistent with human rights. Many developed countries abstained from the 1986 General Assembly Declaration on the Right to Development because they believed that economic development

---

[168] *See id.* at 27-28.

[169] *See, e.g.*, Case Concerning the Gabcíkovo-Nagymaros Project (Hungary/Slovakia), 1997 I.C.J. No. 92, ¶ 14 [hereinafter Gabcikovo-Nagymaros Project] (Oda, J., dissenting) (referring to the "more or less contradictory issues of economic development on the one hand and preservation of the environment on the other").

[170] *See, e.g.*, J. WILLIAM FUTRELL, THE TRANSITION TO SUSTAINABLE DEVELOPMENT LAW 9 (1994) ("Agenda 21 is a consistent, coherent attempt to identify the goals and means for achieving a sustainable society.").

[171] *See, e.g.*, Wirth, *supra* note 111, at 607 (noting that little evidence exists showing that the environment and development can be made compatible).

[172] *See, e.g.*, PRESIDENT'S COUNCIL ON SUSTAINABLE DEVELOPMENT, *supra* note 16, at 26-27 (describing the improvement in the natural environment of the United States).

[173] *See, e.g., id.* at 26-27 (citing U.S. examples).

would be used as an excuse to violate human rights.[174] Although some governments have acted in this way, and continue to do so, there is growing evidence that economic development and social development are synergistic, not antagonistic, forces.[175] Similarly, environmental protection and development are likely to be more robust and effective when they occur at the same time.[176] By furthering environmental, social and economic goals, sustainable development would better improve national wealth and well-being than sacrificing some goals at the expense of others.

Because the framework is both normative and broad, sustainable development is not just another name for national or international environmental law. Environmental law tends to be a descriptive category for laws that attempt to control pollution or protect specific natural resources. Peace and security, economic development, social development and supportive governance are rooted in a variety of treaties and other international agreements that are much broader in scope. In fact, the Rio Declaration's call for international cooperation "in the further development of international law in the field of sustainable development" suggests that many existing agreements would need to be modified to support sustainable development.[177]

Although it is normative, this framework is not utopian. Each country should set specific development and environment goals, but national goals are to be based on each nation's capabilities and priorities.[178] Agenda 21 is a realistic, context-based effort to improve conditions and prevent their deterioration. Indeed, the great differences between our current situation and that of a sustainable society suggest the need to establish both intermediate and long-term goals. Reversing some negative trends, such as greenhouse gas emissions, may require a century.[179] Like Agenda 21, the United Nations Charter contains aspirational language and goals. Yet, as Winston Churchill once stated, "[t]he United Nations was set up not to get us to heaven, but only to save us from hell."[180] The same can be said of sustainable development.

---

[174] *See* 1986 U.N.Y.B., *supra* note 52, at 719-21 (countries abstaining include Denmark, Finland, Germany, Iceland, Israel, Japan, Sweden and the United Kingdom).

[175] *See supra* note 47 and accompanying text.

[176] *See also* Maggio & Lynch, *supra* note 52 (explaining sustainable development as a synthesis of economic development, human rights and environmental protection).

[177] Rio Declaration, *supra* note 3, princ. 27; *see also* Agenda 21, *supra* note 1, ¶¶ 39.1(a), 39.1(c) (suggesting that many international legal instruments have been drafted inadequately). As that occurs, an international law for sustainable development would be created. *See* Sands, *supra* note 4, at 379-81. Indeed, for environmental treaties, the process has already begun. *See infra* notes 436-42 and accompanying text.

[178] *See* Agenda 21, *supra* note 1, ¶ 1.6.

[179] *See* Henry Lee, *Introduction*, *in* SHAPING NATIONAL RESPONSES TO CLIMATE CHANGE: A POST-RIO GUIDE 18 (Henry Lee ed., 1995)

[180] CALDWELL, *supra* note 79, at 102 (citing quotation).

E. Processes for Continuing Evolution of Sustainable Development

These international agreements include a variety of processes for monitoring and ensuring their implementation. These processes can lead, and already have led, to the further elaboration of sustainable development as well as the identification of new issues that need to be addressed. They ensure that the specific meaning of sustainable development will evolve and change. Such changes, in turn, may require the application of new or modified norms to national situations.

Treaties can help clarify sustainable development norms. The parties to each treaty meet regularly, often annually, to examine progress in implementation and to identify problems. Many treaties, particularly environmental treaties, authorize the adoption of protocols to specify the legal obligations of countries with much greater particularity than the original convention. The recent conference of the parties to the Framework Convention on Climate Change in Kyoto, Japan, provides an example. The parties to the original 1992 Framework Convention agreed to a goal of "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic [human-caused] interference with the climate system."[181] To meet that objective, developed countries agreed in 1992 to "the aim of" reducing their greenhouse gas emissions to 1990 levels.[182] The 1997 Kyoto Protocol is more definite; it commits developed countries to reducing their greenhouse gas emissions to between 5% and 7% below 1990 levels by 2008 to 2012.[183] The protocol sets out initial steps that developed countries should take to stabilize greenhouse gas emissions but leaves for a later day the immediate responsibilities of developing countries as well as the responsibilities of developed countries after 2012.

International conferences on various issues also help create consensus on important aspects of sustainable development. The 1994 International Conference on Population and Development in Cairo endorsed a plan of action that links the provision of reproductive health care, education and greater rights for women, to reduction in population growth rates.[184] In so doing, the Cairo conference broke an impasse on how to limit population growth that had prevented UNCED from taking a stronger position in 1992.[185] Because devel-

---

[181] Framework Convention on Climate Change, *supra* note 9, art. 2.

[182] *Id.* art. 4.2(b). Countries also agreed to inventory their greenhouse gas emissions and report that inventory to the conference of the parties. *See id.* art. 4.1(a).

[183] *See* Kyoto Protocol to the United Nations Framework Convention on Climate Change, *supra* note 9, art. 3.

[184] *See Report of the International Conference on Population and Development*, *supra* note 116, ¶ 1.5.

[185] *See* Barbara B. Crane & Stephen L. Isaacs, *The Cairo Programme of Action: A New Framework for International Cooperation on Population and Development Issues*, 36 HARV.

oping countries, which tend to have the highest population growth rates, resisted measures that appeared to coerce birth control, Agenda 21 simply calls for research, information sharing and the consideration of demographic factors in formulating and implementing national sustainable development strategies.[186] The Cairo approach, which already was being used in many places throughout the world, has made it more likely that the world's population will stabilize around the year 2050.[187]

The CSD process for reviewing progress under Agenda 21 also has led to some specific refinements in the international understanding of sustainable development and may lead to greater refinements in the future. From 1993 to 1997, the CSD reviews, though relatively general, kept Agenda 21 alive, led to reporting by individual countries concerning their actions under Agenda 21 and greater sharing of information among countries, and stimulated many countries to begin making progress toward sustainable development.[188] In a number of cases, the CSD process identified gaps in Agenda 21 and built upon its recommendations. In 1995, for example, the CSD recommended that states ban leaded gasoline, a suggestion not contained in Agenda 21.[189] Because the CSD's review for this period lacked clear priorities, however, such recommendations were relatively rare.[190]

For the annual reviews between 1998 and 2001, the Programme for the Further Implementation of Agenda 21 suggests greater involvement by high-ranking officials and reviews that are focused on the issues most crucial to sustainable development.[191] Thus, the overriding issue in each of these annual reviews will be poverty and patterns of production and consumption—two key issues in sustainable development.[192] In each of the four years leading up to the comprehensive review in 2002, the CSD will also focus on particular natural resources, economic sectors, and certain additional issues. The spe-

---

INT'L L.J. 295, 299 (1995) (describing Cairo's unique coalition of advocates challenging traditional approaches to family planning).

[186] *See* Agenda 21, *supra* note 1, ch. 5.

[187] *See* UNITED NATIONS ENVIRONMENT PROGRAMME, *supra* note 5, at 1-12.

[188] *See* MARIA S. VERHEIL & WILLIAM R. PACE, RENEWING THE SPIRIT OF RIO 17-18, 52 (1997). For the first five years, however, it has done little more. *See id.* at 18-19; *see also supra* note 5 and accompanying text.

[189] *See* 1995 CSD Report, *supra* note 112, ¶ 103. Since then, 13 countries have since decided to do so. *See* Scherr, *supra* note 6, at 7-8. Agenda 21 is silent on leaded gasoline. The Programme for the Further Implementation of Agenda 21, however, reiterates that recommendation. *Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 47(f) (urging the elimination of leaded gasoline "as soon as possible").

[190] *See* 1993 CSD Report, *supra* note 112, annex I (outlining broad agenda for 1993-1997 CSD meetings). *But see* 1996 CSD Report, *supra* note 112, at 55 (endorsing global program of action for protection of marine environment from land-based activities); 1994 CSD Report, *supra* note 112, ¶ 161, annex I (endorsing international priorities for action on chemical safety).

[191] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶¶ 131, 133(a) (advising the CSD to avoid repeating work done in other forums).

[192] *See id.* ¶ 132, app.

cific matters for 1998, for example, were freshwater management, industry and such issues as capacity building and technology transfer.[193] The more focused process provides an opportunity to achieve more specific and useful international agreement on these issues.[194]

While each of these implementation processes is distinct, they all can foster understanding and agreement on what is needed for sustainable development at the national level. But national actions may also be endorsed in future international agreements and thus influence the evolution of sustainable development. The Rio Declaration, for example, calls for environmental impact assessments prior to major governmental actions.[195] In so doing, it echoes the National Environmental Policy Act of 1969, a pioneering American statute that requires such assessments.[196]

II. PRINCIPLES FOR NATIONAL GOVERNANCE

A. Common Responsibilities

The primary responsibility for implementing Agenda 21 and related agreements rests with national governments.[197] The role of national governments is to ensure that development and environment goals are achieved and maintained, and to use certain principles in doing so. National governments are not intended to do everything, however; their essential job is to encourage and facilitate sustainable development activities by others. At the same time, developed countries have "common but differentiated responsibilities" for addressing global environmental degradation.[198]

---

[193] *See id.* app. The themes for other years are as follows: 1999—oceans and seas, tourism, consumption and production patterns; 2000—land resources, agriculture, financial resources, trade and environment, and economic growth; 2001—atmosphere, energy and transportation, information for decision-making and participation, and international cooperation. *See id.*

[194] *See Report on the Sixth Session*, U.N. Commission on Sustainable Development, 6th Sess., U.N. Doc. E/CN.17/1998/20 (1998) (providing specific recommendations on freshwater management, industry and other issues). A related but somewhat separate process exists for selected issues (such as forestry) for which negotiation of a convention is not considered appropriate. An intergovernmental panel on forests developed a set of recommendations that the CSD endorsed in 1997. *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 38. CSD initiated that process. *See* 1995 CSD Report, *supra* note 112, ¶ 204, annex II, at 95. States recently agreed to continue that intergovernmental dialogue to implement the earlier recommendations and to negotiate unresolved issues. *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 40 (instructing the Ad Hoc Intergovernmental Forum in Forests to report its work in 1999). These agreements may provide the basis for a treaty on forestry or may be used in lieu of a treaty.

[195] *See* Rio Declaration, *supra* note 3, princ. 17.

[196] 42 U.S.C. §§ 4321-4370(d) (1996).

[197] *See* Agenda 21, *supra* note 1, ¶¶ 1.3, 8.2; *see also* Stockholm Declaration, *in Human Environment*, *supra* note 82, princ. 17.

[198] *See* Rio Declaration, *supra* note 3, princ. 7; *see also* Stockholm Declaration, *in Human Environment*, *supra* note 82, princ. 23. The concept of common but differentiated responsibility

1. Role of National Governments

National sovereignty confers authority on governments to do some things that other entities simply can not do. These powers include defense of territorial integrity from hostile forces, the adoption and modification of domestic laws, the establishment and operation of legal and administrative institutions to implement laws and prevent and punish violations, taxation, and the provision of public goods such as social services and a clean environment. Agenda 21 recommends that national governments "ensure socially responsible economic development while protecting the resource base and the environment for the benefit of future generations."[199] This understanding is at the core of sustainable development and underscores the central role that governments should play in fostering sustainable development. Indeed, a growing number of national constitutions explicitly recognize a human right to a healthy environment or otherwise direct the state to protect the environment, thereby supplementing existing economic and social responsibilities.[200] In virtually every chapter of Agenda 21, national governments' responsibilities for sustainable development are prominently addressed. To accomplish environmental goals, countries should "enact effective environmental legislation," including environmental standards.[201] For all goals, governments are urged to adopt national sustainable development strategies based on the recommendations in Agenda 21.[202]

The Programme for the Further Implementation of Agenda 21 emphasizes the importance of such strategies by recommending that they be in place by 2002.[203] These strategies should be premised on the national government's responsibility to provide a legal and policy framework in which sustainable development can occur at all levels of government and in all sectors of society. Governments should move existing legal and organizational structures toward sustainable development, institutionalize the basic premises and goals of sustainable development in decision-making processes, adapt sustainable development norms to the particular conditions of the state, and be

---

previously had been endorsed in a variety of international agreements. *See* Sands, *supra* note 4, at 344.

[199] Agenda 21, *supra* note 1, ¶ 8.7; *see also* 1995 CSD Report, *supra* note 112, ¶ 22 (restating government responsibility to provide a framework for achieving sustainable production and consumption patterns).

[200] *See Rio Declaration on Environment and Development: Application and Implementation, Report of the Secretary General*, U.N. Commission on Sustainable Development, 5th Sess., ¶ 19, at 6, 35 n.12, U.N. Doc. E/CN.17/1997/8 (1997) [hereinafter *Application and Implementation*] (identifying Ukraine, South Africa, Ethiopia, Argentina and the Philippines as recent examples); WEISS, IN FAIRNESS TO FUTURE GENERATIONS, *supra* note 162, at 297-317, 325-27 (setting forth environmental provisions of various national constitutions).

[201] Rio Declaration, *supra* note 3, princ. 11; *accord id.* princs. 13, 17.

[202] *See* Agenda 21, *supra* note 1, ¶ 8.7.

[203] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 24(a).

capable of proactive decisions as well as appropriate responses to unexpected events. These strategies also should include priorities. States have not agreed to achieve sustainability in 2002; they simply have agreed that progressive integration of social, economic and environmental goals requires the existence of a meaningful strategy by that time. A strategy of this nature could also be called a national policy because it would necessarily be reflected in the worldview and day-to-day actions of political decision-makers as well as in the law.

Each country has problems that are addressed by sustainable development, even though they necessarily differ from country to country. Economic development, social development and environmental protection goals will depend on the extent to which these goals already are being met in a country and on its own unique circumstances. In many developing nations, health care, clean drinking water, sanitation, deforestation, overgrazing, population growth and the status of women are major challenges for sustainability.[204] In developed countries such as the United States, sustainability challenges include urban and minority unemployment, high materials and energy consumption levels, and the emission of greenhouse gases that contribute to global warming.[205]

The national government as a whole needs to direct this effort because sustainable development is not within the province of any single agency. A nation's environmental agency cannot be the only government agency that is responsible, for example, because sustainable development embraces broader goals. Because the work of each agency has environmental and social aspects, and because many agencies affect individual economic sectors, integrated decisionmaking is impossible without an overall national effort to ensure better coordination among agencies for sustainable development. In addition to coordination, though, some national-level entity should review proposed legislation, including budget and appropriations legislation, for its potential to further or impede sustainable development goals.

In the first five years after Rio, approximately 150 countries set up some kind of national-level council to begin establishing an integrated

---

[204] *See, e.g.*, Stuart L. Hart, *Beyond Greening: Strategies for a Sustainable World*, HARV. BUS. REV., Jan.-Feb. 1997, at 66, 70.

[205] *See, e.g., id.* When Agenda 21 was adopted in 1992, most developed nations already had longstanding environmental statutes to control hazardous wastes, for example, or reduce water pollution. Because Agenda 21 endorsed these achievements, some have suggested that developed countries already have achieved environmentally sustainable development and that it remains for developing countries to follow suit. Wholly apart from such issues as global warming and consumption, however, Agenda 21 also recommends more serious efforts to prevent the generation of hazardous wastes and protect water quality on a watershed basis than most developed countries have undertaken. *See, e.g.*, John Dernbach and the Widener University Law School Seminar on Law and Sustainability, *supra* note 7, at 10,514, 10,523-24.

approach.[206] These councils can and have helped foster consensus on appropriate means of achieving sustainable development in particular countries.[207] For these councils to be effective, however, governments must implement substantial parts of their recommendations.

2. *Limitations*

This attention to the national government is qualified in three important ways: delegation to the lowest effective level of government, broad public participation, and partnerships with other nations.

a. Subsidiarity

Agenda 21 calls on national governments to delegate sustainable development responsibilities "to the lowest level of public authority consistent with effective action."[208] Within the European Community, this is known as the principle of subsidiarity.[209] In federal systems, for example, national governments would delegate to states or provinces responsibilities for sustainable development that are most effectively carried out at the state or provincial level, and the national government or states would delegate to local governments responsibilities that are best undertaken at that level. Subsidiarity attempts to ensure that national policies are carried out in a manner that fosters self-determination and accountability at a local level, political liberty, flexibility, preservation of community identity, social and cultural diversity, and respect for distinct communities within nations.[210]

Subsidiarity raises two related questions that are not fully answered in Agenda 21 and that each nation needs to answer: What level of government is consistent with effective action, and which particular responsibilities should be delegated? Without doubt, many problems are best addressed at the local level. In many ways, sustainable development is most understandable in the specific places where people live, work and play. In these contexts, the interconnections among the environment, the economy and social conditions are more readily visible, easier to understand and often easier to address. The environmentalist slogan "think globally, act locally" is a powerful expression of community-based sustainable development. In fact, natural resources protection is unlikely to succeed unless the people

---

[206] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 11.

[207] *See, e.g.*, NATIONAL COUNCILS FOR SUSTAINABLE DEVELOPMENT, MAKING SUSTAINABLE DEVELOPMENT WORK: A VISION AND PRACTICAL MEASURES FOR NATIONAL COUNCILS AS EFFECTIVE MECHANISMS FOR SUSTAINABLE DEVELOPMENT 2-3 (1997); PRESIDENT'S COUNCIL ON SUSTAINABLE DEVELOPMENT, *supra* note 16 (providing recommendations for the United States).

[208] Agenda 21, *supra* note 1, ¶ 8.5(g).

[209] *See* George A. Bermann, *Taking Subsidiarity Seriously: Federalism in the European Community and the United States*, 94 COLUM. L. REV. 331, 338-66 (1994).

[210] *See id.* at 339-44.

who live and work in a particular area have a stake in the protection of those resources. In eastern and southern Africa, for example, local people are more likely to protect elephants and other animals if they have some economic or social interest in the preservation of these animals.[211] Similarly, the convention to combat desertification, which was negotiated after Rio, emphasizes local participation.[212]

Because many problems manifest themselves at the local level, countries can make substantial progress toward sustainable development simply by broadly encouraging local (and, where they exist, state or provincial) governments to create and implement their own sustainable development strategies, and by protecting the efforts of indigenous peoples to do the same.[213] A few European countries have encouraged such local initiatives; European countries accounted for the overwhelming majority of the world's 1,812 local Agenda 21 initiatives in 1996.[214]

Other problems addressed by sustainable development, however, require concerted national action as well as local action. It is difficult to imagine an effective water pollution control plan or greenhouse gas emission control strategy, for example, that did not involve some national standards or goals. Moreover, a nagging problem with local flexibility is competition for economically attractive but environmentally unsustainable industry between jurisdictions within a country; local jurisdictions often use reduced environmental standards, tax relief or subsidies to make their jurisdiction a more appealing location for such industry.[215] To the extent that such incentives are present, local flexibility is a pathway to continued unsustainable development.

---

[211] *See* JONATHAN S. ADAMS & THOMAS O. MCSHANE, THE MYTH OF WILD AFRICA: CONSERVATION WITHOUT ILLUSION (1996) (stating that wildlife conservation can succeed only if it is directly related to rural economic development); *see also* KENYA WILDLIFE SERVICE, WILDLIFE-HUMAN CONFLICTS IN KENYA (1994) (recommending actions to share benefits of wildlife with landowners).

[212] *See* United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, art. I, ¶ 2, U.N. Doc. A/AC.241/15/Rev. 7 (1994), *reprinted in* 33 INT'L LEGAL MATERIALS 1328 (1994). *See generally* Kyle W. Danish, *International Environmental Law and the "Bottom-Up" Approach: A Review of the Desertification Convention*, 3 IND. J. GLOBAL LEGAL STUD. 133 (1995).

[213] *See* Agenda 21, *supra* note 1, ch. 28; *see, e.g.*, Bryan T. Downes, *Toward Sustainable Communities: Lessons from the Canadian Experience*, 31 WILLAMETTE L. REV. 359 (1995) (examining local Canadian roundtable discussions). Similarly, indigenous peoples need to be empowered to make their own decisions and to protect their historic relationship with specific lands. *See* Agenda 21, *supra* note 1, ch. 28.

[214] *See* International Council for Local Environmental Initiatives, *Local Agenda 21 Survey: A Study of Responses by Local Authorities and Their National and International Associations to Agenda 21*, at fig. 1 (visited Oct. 2, 1998) <http://www.iclei.org/la21/la21rep.htm>.

[215] *See* COSTANZA ET AL., *supra* note 166, at 228-30. The "race to the bottom" issue in the United States has inspired a vigorous debate in the legal literature. *Compare* Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210, 1253 (1992) (arguing that competition for industry among states should not decrease social welfare and should be considered "at least

The experience of the European Community as well as federal systems such as the United States can provide some assistance in solving that problem.[216] Among other lessons, the United States and European Community record suggests the value of addressing particular problems through national goals or standards, and of giving lower levels of government some flexibility in establishing the means by which those goals or standards are achieved. Such an approach requires the national government to decide generally what needs to be done and assigns responsibility for determining how to implement national goals or standards within its jurisdiction to lower levels of government.[217] More broadly, a mix of governmental tiers provides a greater opportunity to match the scale and type of problem to the particular strengths of different levels of government. It also provides a check by one level of government against errors by, or even corruption within, other governmental levels.[218]

b. Public Participation

Governmental efforts should be based on the participation of concerned individuals and organizations, and should in turn motivate nongovernmental actors to further sustainable development.[219] Agenda 21 and other agreements advocate respect for human rights and basic freedoms, accountable governance, and effective public participation in governmental decisions.[220] Thus, they promote the

---

presumptively beneficial") *with* Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996) (seeking multiple tiers of government for environmental regulation and listing the most significant types of regulatory failure that have occurred or are expected), *and* Kirsten H. Engel, *State Environmental Standard-Setting: Is There a "Race" and Is It "To the Bottom"?*, 48 HASTINGS L.J. 271 (1997) (arguing that empirical data demonstrate the existence of interstate competition among states for industry that results in lower environmental standards).

[216] *See generally* Bermann, *supra* note 209, at 447 (arguing that "the United States has shown rather little use for a specific doctrine of subsidiarity"); *id.* at 450 ("U.S. federalism places greater emphasis on the presence of an overall balance of power between the federal government and the states than on respect for any single rule for allocating competences among the different levels of government.").

[217] *See, e.g.*, John C. Dernbach, *Pennsylvania's Implementation of the Surface Mining Control and Reclamation Act: An Assessment of How "Cooperative Federalism" Can Make State Regulatory Programs More Effective*, 19 U. MICH. J.L. REFORM 903 (1986) (explaining how minimum federal standards coupled with some state flexibility in implementing those standards improved the effectiveness of a state's environmental regulatory program for coal mining).

[218] *See* Daniel C. Esty, *Sustainable Development and Environmental Federalism*, 3 WIDENER L. SYMP. J. (forthcoming 1998).

[219] *See* Agenda 21, *supra* note 1, ¶¶ 8.3(d), 8.4(e); *see also id.* ¶ 23.2 (stating sustainable development requires "broad public participation in decision-making").

[220] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 23. In specific program areas, Agenda 21 also identifies public participation as a major goal. These program areas include deserts, *see* Agenda 21, *supra* note 1, ch. 12, subch. F, and agriculture, *see id.* ch. 14, subch. B; *Declaration on the Right to Development*, *supra* note 52, art. 6 (stressing importance of human rights and political freedoms); *Agenda for Development*, *supra* note 31, ¶ 1 (stressing importance of democracy and respect for human rights and freedoms as essen-

basic tenets of the International Covenant on Civil and Political Rights. Yet Agenda 21 represents a broader and more detailed understanding of democratic governance than is expressed in that covenant.

Because of the difficult and worsening problems that sustainable development needs to address, national governments should energize and mobilize every part of society to do its best to help achieve national goals.[221] Agenda 21 emphasizes the desirability of direct participation in governance by identifying important roles for women, youth, indigenous people and their communities, nongovernmental organizations, local authorities, workers and their trade unions, business and industry, the scientific and technological community, and farmers.[222] Public participation in the development and implementation of environmental and other laws is also encouraged.[223] In addition, Agenda 21 recommends that governments ensure that nongovernmental actors have access to information necessary for effective participation.[224]

Thus, the national government's responsibility is to create and foster a legal and institutional framework in which sustainable development is supported and encouraged. This power-dispersing approach also suggests that sustainable development is not a framework requiring, or even encouraging, larger or more intrusive governments. To the contrary, it encourages government to act as a catalyst and use

---

tial "for the realization of social and people centred sustainable development"). In most developing countries, vast inequalities exist between the rich and the poor, and governmental development strategies have tended to favor the rich and powerful. *See* ANN SEIDMAN & ROBERT B. SEIDMAN, STATE AND LAW IN THE DEVELOPMENT PROCESS 5, 225-304 (1994). Thus, the basic needs of most people in these countries will be fulfilled "only when the people participate in shaping their own destinies, when they effectively control their own elites and would-be ruling classes." *Id.* at 4 (emphasis omitted).

[221] In a sustainable system, the government "becomes an advocate for excellence, and oversees and guarantees the integrity of the process." THE ASPEN INSTITUTE, THE ALTERNATIVE PATH: A CLEANER, CHEAPER WAY TO PROTECT AND ENHANCE THE ENVIRONMENT 30 (1996). This requires government to monitor substantive progress as well as the effectiveness of public participation and other processes. *See id.* at 32. Public participation by nongovernmental actors extends not just to national governance but also to international decisions. *See* Maggio & Lynch, *supra* note 52, at 38-43.

[222] *See* Agenda 21, *supra* note 1, chs. 23-32; *see also id.* ¶ 8.3(c) (recommending that governmental processes "facilitate the involvement of concerned individuals, groups and organizations in decision-making at all levels").

[223] *See* Rio Declaration, *supra* note 3, princ. 10; *see also* Agenda 21, *supra* note 1, ¶ 23.2 ("One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making."). In addition, citizens should have "[e]ffective access to judicial and administrative proceedings, including redress and remedy." Rio Declaration, *supra* note 3, princ. 10; *see also* Agenda 21, *supra* note 1, ¶ 27.13 (recommending that nongovernmental organizations have the right to protect the public interest by law).

[224] *See* Rio Declaration, *supra* note 3, princ. 10; *see also* Agenda 21, *supra* note 1, ¶¶ 40.17-40.30 (recommending more effective public dissemination of data related to sustainable development); PRINCIPLES, *supra* note 15, at 596-628 (offering detailed explication of types of environmental information required under Agenda 21 and other international agreements). National governments also are urged to educate the public about the challenges and opportunities of sustainable development. *See* Agenda 21, *supra* note 1, ¶¶ 8.11, 36.10.

the strengths of nongovernmental actors. For the private sector, for example, governments should take full advantage of the ingenuity, motivation, rapid feedback and better-quality information that decentralized decision-making and the profit motive can provide.[225]

c. International Partnership

Nations should act in partnership with other nations by, among other things, cooperating with each other to address international concerns and share information. For example, countries are asked to cooperate in preventing the migration of unhealthy or environmentally degrading activities to other countries.[226] Countries also are to provide early or immediate notification of natural disasters, emergencies or other activities that may have adverse effects outside their boundaries.[227] Eleven of the Rio Declaration's twenty-seven principles directly or indirectly refer to partnership or cooperation among states.[228]

Of course, the need for international partnerships on a variety of other pressing issues has been stated frequently and ignored with almost equal frequency. But the particular reasons for cooperation in regard to sustainable development are compelling. Indeed, much of the importance of the sustainable development agreements lies simply in the international recognition that countries need to work together to solve common problems, and in the processes that were established in the Commission on Sustainable Development and under various treaties to address these problems.

B. Differentiated Responsibilities

For all their common responsibilities, important differences exist between the stated responsibilities of developed and developing countries. The Rio Declaration states:

> In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the

---

[225] *See* VON WEIZSÄCKER ET AL., *supra* note 157, at 143-44; *see also* TERRY L. ANDERSON & DONALD R. LEAL, FREE MARKET ENVIRONMENTALISM 10-11 (1991).

[226] *See* Rio Declaration, *supra* note 3, princ. 14.

[227] *See id.*, princs. 18, 19.

[228] *See id.*, princs. 2, 5-7, 9, 12-14, 18, 19, 27. Agenda 21 states that it "marks the beginning of a new global partnership for sustainable development." Agenda 21, *supra* note 1, ¶ 1.6. Ongoing international cooperation is also detailed in recent treaties. *See, e.g.*, Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982, Relation to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, August 4, 1995, arts. 8, 20, 21, 25, U.N. Doc. A/CONF.164/37 [hereinafter Straddling and Highly Migratory Fish Stocks Agreement]; Vienna Convention for the Protection of the Ozone Layer, March 22, 1985, art. 4, UNEP Doc. 1G.53/5/Rev.1, *reprinted in* 26 INT'L LEGAL MATERIALS 1529 (1987).

> responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.[229]

Recognition of differentiated responsibilities was at the political heart of the UNCED synthesis because developing countries were unwilling to have global environmental problems impede their development.[230] Differentiated responsibilities also reflect equitable norms concerning the use of resources and the treatment of nations with varying capabilities.[231] Questions about differentiated responsibilities arise in at least three major areas: environmental responsibilities, financial and other assistance, and consumption of materials and energy.

1. Environmental Responsibilities

Because developed countries have played the greatest role in creating most global environmental problems, and have superior ability to address them, they are expected to take the lead on environmental problems. The Rio Declaration recommends the adoption of "effective environmental legislation" but adds that standards used by some countries "may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries."[232] A lower level of environmental responsibility for developing countries is not universally accepted; the United States recorded an interpretative statement to the Rio Declaration, saying that it did not accept any interpretation that would imply "any diminution in the responsibilities of developing countries."[233] Because developing countries are concerned about the costs of environmental protection, resolution of this issue is linked to financial assistance from developed countries.

---

[229] Rio Declaration, *supra* note 3, princ. 7.

[230] *See, e.g.*, Subrata Roy Chowhury, *Common but Differentiated State Responsibility in International Environmental Law: From Stockholm (1972) to Rio (1992), in* SUSTAINABLE DEVELOPMENT AND GOOD GOVERNANCE, *supra* note 12, at 322, 331 (arguing that the right to formulate development policies is indisputably tied to the right to self-determination).

[231] PRINCIPLES, *supra* note 15, at 204-05, 217-20; *see also* Holmes Rolston III, *Environmental Protection and an Equitable International Order: Ethics After the Earth Summit, in* THE ETHICAL DIMENSIONS OF THE UNITED NATIONS PROGRAM ON ENVIRONMENT AND DEVELOPMENT, AGENDA 21, at 267, 273 (Donald A. Brown ed., 1994) (discussing how fairness requires differential treatment of nations).

[232] Rio Declaration, *supra* note 3, princ. 11.

[233] *U.S. Statement for the Record on the UNCED Agreements*, U.S. DEP'T OF STATE DISPATCH SUPPLEMENT, July 1992, at 35, 35.

2. *Financial and Other Assistance*

In addition to moving toward sustainable development on their own, developed countries are urged to provide financial, technical, and other assistance to help developing countries fulfill their sustainable development responsibilities. In Agenda 21, developed countries stated their commitment to contribute 0.7% of their gross domestic product to official development assistance for sustainable development on an annual basis, provide technical assistance, facilitate the use of environmental technologies in developing countries, and help developing countries improve their capacity to govern in a responsible and sustainable manner.[234] In so doing, they agreed to change the purpose of their official assistance from development to sustainable development.

Scientific and technological capacity building, and capacity building for governance, are important needs. Agenda 21 recognizes that the provision of new and more efficient technologies to developing countries is necessary for sustainable development, and it recommends that such technologies be provided on favorable terms.[235] National responsibility for sustainable development also requires that nations have the ability to set goals based on a broad vision for sustainable development, the capacity to design legal and other programs to meet those goals and the capacity to effectively implement those programs.[236] National governments must, in other words, have the capacity to establish and maintain a framework in which sustainable development can occur.[237] Such a framework would help ensure, among other things, that public and private investments within a country foster sustainable development, and that sustainable developmental activities can compete on a level playing field with other activities. Agenda 21 and the Rio Declaration therefore emphasize the importance of governmental capacity building for developing

---

[234] *See* Agenda 21, *supra* note 1, ¶¶ 33.13, 33.18 (estimating average annual costs of implementing Agenda 21 between 1993 and 2000 at $600 billion).

[235] *See id.* ¶¶ 34.4, 34.5. For many developed countries, environmental technology exportation is seen as an economic opportunity. *See* ENVIRONMENTAL TECHNOLOGIES TRADE ADVISORY COMMITTEE, RECOMMENDATIONS REPORT OF THE ETTAC (1996).

[236] *See* JOHN F.E. OHIORHENUAN & STEPHEN M. WUNKER, CAPACITY BUILDING REQUIREMENTS FOR GLOBAL ENVIRONMENTAL PROTECTION 5 (1995).

[237] Capacity building requires strengthening of individual skills and institutional competence within countries as well as the normative framework in which nations operate, including domestic laws, international conventions and social processes. *See id.* at 3-4. Capacity building should result in governmental efforts that are adequately funded, well managed, capable of integrating environment and development policies, and supported by sufficient nongovernmental constituencies to overcome interests vested in unsustainable practices. *See* WORLD BANK, FIVE YEARS AFTER RIO: INNOVATIONS IN ENVIRONMENTAL POLICY 15-17 (1997) [hereinafter FIVE YEARS AFTER RIO]; *see also* Jaro Mayda, *Environmental Legislation in Developing Countries: Some Parameters and Constraints*, 12 ECOLOGY L.Q. 997 (1985).

countries and countries in transition from socialist to capitalist economies, many of which lack effective legal systems.[238]

However, five years later, the lack of institutional as well as human capacity was still "a major constraint to the successful implementation of Agenda 21."[239] Developed countries as a whole have never delivered on the 0.7% commitment and their overall contributions to official development assistance since UNCED have actually declined.[240] While many developing countries now are receiving substantial private investments, the rationale for governmental assistance still holds. Although the private sector provides sums equal to or larger than those received from developed countries' governments, about three-fourths of this private money goes to just twelve countries.[241] For most of the rest of the developing world, official development assistance matters a great deal. In addition, the extent to which private investments further sustainable development or capacity building is far from clear. While some of this private money is spent on renewable energy supplies or less-polluting manufacturing technology, some funds are also invested on environmentally destructive logging or mining practices that are prohibited in developed countries.[242] In fact, the ability of developing countries to injure the interests of developed countries through environmental degradation may make the rationale for official development assistance even stronger now than it was prior to UNCED.

For global environmental problems, little doubt appears to exist that the responsibilities of developing countries are contingent upon the receipt of outside assistance. Financial and technological assistance is thus a feature of recent multilateral treaties, including those for stratospheric ozone, climate and biodiversity.[243] The Biodiversity Convention and the Framework Convention on Climate Change even

---

[238] *See* Agenda 21, *supra* note 1, ¶¶ 8.12, 8.26, 8.34, 8.54, 19.55, ch. 37; Rio Declaration, *supra* note 3, princ. 9. Developed countries are expected to direct about a quarter of all official development assistance for capacity building. *See* Agenda 21, *supra* note 1, ¶ 37.12.

[239] *Report of the Secretary-General*, *supra* note 7, ¶ 104.

[240] *See* Organization for Economic Cooperation & Development, *Financial Flows to Developing Countries in 1995: Sharp Decline in Official Aid; Private Flows Rise* (visited July 13, 1997) <http://www.oecd.org/dac/htm/opod-doc.htm>. *See generally* EDWIN M. MARTIN, ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, DEVELOPMENT CO-OPERATION: 1972 REVIEW 151-59 (1972) (explaining postwar history of development assistance).

[241] *See* PRIVATE CAPITAL FLOWS, *supra* note 73, at 11.

[242] *See* French, *supra* note 73, at 12; *see also* HILARY F. FRENCH, INVESTING IN THE FUTURE: HARNESSING PRIVATE CAPITAL FLOWS FOR ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT (Jane A. Pederson ed., 1998) (describing ways in which private capital supports unsustainable development and identifying ways in which such capital flows could be used to foster sustainable development).

[243] *See, e.g.*, Convention on Biological Diversity, *supra* note 9, arts. 20, 21; Framework Convention on Climate Change, *supra* note 9, art. 11; London Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer (1990), June 29, 1990, art. 10, UNEP/OZ.L.Pro.2.3 (Annex II).

make the substantive obligations of developing countries expressly contingent upon the receipt of financial and technical assistance.[244]

Significant questions remain over responsibility for environmental problems that are primarily national or local. In meetings of the Commission on Sustainable Development, many developing countries have asserted that they have no responsibility for more localized environmental problems unless they receive financial and technical assistance, and many developed countries have asserted that developing countries are responsible for such problems whether or not they receive assistance.[245] To many in developed countries, sustainable development appears to be another reason for a handout to developing countries, raising longstanding and difficult questions about the effectiveness of aid to those nations.[246] Many in developing countries, of course, see sustainable development as an effort by developed countries to limit their progress. Although national self-interest is likely to move developing countries toward sustainable development in some respects, their claims for financial and other assistance suggest that many developing countries may accomplish relatively little for sustainable development on their own.

3. Consumption of Materials and Energy

The pressure that developed countries put on the environment is directly related to their consumption of materials and energy. Reducing consumption is thus perhaps the single most important sustainable development challenge facing the United States and other developed countries. Reducing consumption affects all natural resources, all economic sectors and most aspects of community or social development. The challenge has two aspects: putting an end to the growth of energy and materials consumption, and increasing the efficiency with which materials and energy are used.[247] Because efficiency increases easily could be outpaced by increases in the rate of consumption, both goals are essential.

---

[244] *See* Convention on Biological Diversity, *supra* note 9, art. 20.4 (stating that developing-country implementation of convention "will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account the fact that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties"); Framework Convention on Climate Change, *supra* note 9, art. 4.7 (same).

[245] *See* Pamela S. Chasek, The United Nations Commission on Sustainable Development: The First Five Years 22 (Jan. 1998) (unpublished manuscript, on file with author).

[246] Much, though certainly not all, development assistance has been wasted because of failure to understand local conditions, corrupt host governments and other reasons. *See, e.g.*, GRAHAM HANCOCK, THE LORDS OF POVERTY (1989) (criticizing official aid organizations for wasting money on ineffective aid projects); SEIDMAN & SEIDMAN, *supra* note 220, at 25 (noting that "volumes of development literature" report the failures of projects, policies, and laws). *But see* GENERATION, *supra* note 31, at 6 ("Despite the doubts and misgivings, *development works.*") (emphasis in orginal).

[247] *See* DONELLA H. MEADOWS ET AL., BEYOND THE LIMITS xv-xvi (1992).

This issue poses particularly difficult questions because consumption has become an end in itself in many developed countries,[248] and because there is no obvious boundary to a person's needs. The Brundtland Commission's definition of sustainable development—development that meets the needs of present and future generations—includes needs such as food, clothing, shelter and employment.[249] For most people in developed countries, the greatest limiting factor on consumption is not needs but income—as income grows, so do perceived needs.

Identifying the achievement of sustainable consumption patterns as a "high priority," Agenda 21 suggests that developed countries "should take the lead in achieving sustainable consumption patterns."[250] Several recent reports provide a means of expressing the challenge more precisely. One indicates that industrialized nations will need to reduce materials consumption, energy use and environmental degradation by more than 90% by 2040 just to maintain overall impacts at current levels.[251] Another concludes that resource productivity in industrialized countries needs to increase by more than a factor of ten in the next 30 to 50 years to achieve sustainability.[252] As daunting as these changes may be, increases in the efficiency of energy and materials use by a factor of four can be achieved with currently available technology and knowledge.[253] The Programme for Further Implementation of Agenda 21 suggests that industrialized countries consider these studies in addressing the efficiency of resource use.[254]

The Framework Convention on Climate Change and the Kyoto Protocol provide perhaps the most direct international approach to consumption, at least on energy issues. In fact, the Kyoto Protocol reduction targets for developed countries should be understood as intermediate goals, not final goals. The level of greenhouse gases in the atmosphere will continue to rise under the Kyoto Protocol, albeit more slowly, perhaps doubling or tripling before it is stabilized. The Intergovernmental Panel on Climate Change, the international group of climate scientists whose reports prompted the protocol, has con-

---

[248] *See generally* COSTANZA ET AL., *supra* note 166, at 21.

[249] *See* OUR COMMON FUTURE, *supra* note 90, at 43.

[250] Agenda 21, *supra* note 1, ¶¶ 4.8(b), 4.9. Although emphasizing the role of developed countries, Agenda 21 encourages more efficient production as well as changes in consumption patterns in all countries. *See id.* ¶ 4.15; *see also* Rio Declaration, *supra* note 3, princ. 8 ("To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption . . . .").

[251] *See* BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT [now known as the World Business Council for Sustainable Development], GETTING ECO-EFFICIENT 10 (1993).

[252] *See* FACTOR 10 CLUB, DECLARATION OF CARNOULES ON FACTOR 10 (1994).

[253] *See generally* VON WEIZSÄCKER ET AL., *supra* note 157 (summarizing various technologies and methods for achieving such improvements).

[254] *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 28(f).

cluded that an immediate emissions reduction of 50% to 70%, with further reductions later, is likely needed to meet the Convention's goal of stabilizing the level of atmospheric greenhouse gases.[255] This conclusion, moreover, applies to emissions from both developed and developing countries.

The Kyoto Protocol underscores a compelling need for developed countries—decoupling prosperity from the consumption of materials and energy. While developed countries have made some progress toward that goal, a tenfold improvement in energy and materials efficiency is needed to prevent the continuing buildup of greenhouse gases in the atmosphere. These improvements can be accomplished in several ways. The first is by the widespread use of more efficient technologies. Such technologies should greatly increase the efficiency with which materials, energy and water are used. They also should reduce the need for fossil fuels that contribute to global warming.[256]

Still another approach begins with identification of the services that a particular economic sector provides. Thinking about economic sectors in this way provides a method for decoupling what people want from the materials and energy that are ordinarily used to provide it. What people really want, for example, is not kilowatts of electricity but rather services like hot showers and cold drinks.[257] Energy conservation, as well as other means of heating and cooling, may provide less expensive and more sustainable ways of providing some or all of these services than construction of new power plants.

Another approach would include nontechnological alternatives that more directly affect lifestyles. The most effective steps on this course are likely to be those that reduce the need for consumption. This approach borrows an insight from the Cairo program for addressing population growth.[258] Instead of coercing people (especially women) into limiting family size, the international community decided to try to provide women with health care, education and other services. Because these services give women life choices other than child rearing, their availability leads to voluntary reductions in family size. Similarly, coercing consumption reductions from people in developed countries is impossible and undesirable. Instead, national

---

[255] *See* Intergovernmental Panel on Climate Change, *IPCC Second Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the UN Framework Convention on Climate Change (1995)*, ¶ 4.6, (visited June 13, 1997) <http://www.unfccc.de/fccc/science/syntrep.html>.

[256] *See Global Change and Sustainable Development*, *supra* note 62, ¶¶ 55, 153.

[257] *See* VON WEIZSÄCKER ET AL., *supra* note 157, at 156; *see also* Joan Magretta, *Growth Through Global Sustainability: An Interview with Monsanto's CEO, Robert B. Shapiro*, HARV. BUS. REV., Jan.-Feb. 1997, at 79, 83 (arguing that consumers buy not because they want the object itself but because they want what it can do).

[258] *See supra* notes 184-87 and accompanying text.

governments should help provide choices in meeting needs that do not involve great consumption of materials and energy. For example, if communities were designed so that one could walk to work or school, or use mass transit, the need for automobiles would be reduced.

Yet another approach is suggested by the existence of social and cultural factors that influence perceived needs. As the Brundtland Commission stated, "sustainable development requires the promotion of values that encourage consumption standards that are within the bounds of the ecological[ly] possible and to which all can reasonably aspire."[259] Consumer education about the effects of particular products and household recycling programs could thus move lifestyles in a more sustainable direction. Laws that make producers responsible for their products even after those products are sold could educate consumers as well as reduce the materials and energy used in those products.[260] Finally, psychologists suggest that family, community, health, work and leisure are more important for personal satisfaction or happiness than consumption.[261] Such insights may also provide opportunities for national approaches to consumption.

Even with these changes, it is difficult to see how the developed countries can reduce consumption without also stabilizing their population. A frequently used indicator of human impact on the environment multiplies population by per capita resource consumption.[262] Although the rapid population growth rates of many developing nations are plainly important, the people in developed countries put more pressure on the environment on a per capita basis.[263] The difficulty of this issue is compounded by immigration from developing countries, which increases population growth in many developed countries.

At day's end, the core responsibility of developed countries is to create workable models of sustainable development within their own boundaries that are not merely functional but that are obviously more attractive than the development approach they are currently pursuing. Indeed, it can be argued that the most important way for developed

---

[259] OUR COMMON FUTURE, *supra* note 90, at 44.

[260] *See* Salzman, *supra* note 18, at 1291-92.

[261] *See, e.g.*, Paul Ekins, *The Sustainable Consumer Society: A Contradiction in Terms?*, 3 INT'L ENVTL. AFFAIRS 243 (1991).

[262] *See, e.g.*, COSTANZA ET AL., *supra* note 166, at 6.

[263] *See, e.g.*, Arnold W. Reitze, Jr., *Population, Consumption and Environment Law*, 12 NAT. RESOURCES & ENV'T 89, 90-92 (1997) (concerning United States); *see also* Arnold W. Reitze, Jr., *Environmental Policy—It is Time for a New Beginning*, 14 COLUM. J. ENVTL. L. 111 (1989) (arguing that global environmental degradation caused by the United States can be traced to three major human phenomena—population, consumption and pollution—and that the United States ignores population and consumption because it finds them hard to control). For the responsibilities of countries to limit population growth, *see supra* notes 184-87 and accompanying text.

countries to exercise international leadership is through domestic implementation and use of such models.[264] They would be justified in taking such a leadership role based on both enlightened self-interest and a moral obligation.[265] If developed countries can do that, developing countries are likely to follow suit. If developed countries can not or will not, developing countries can hardly be expected to take the lead. Such models could help make shortfalls in direct financial assistance less relevant and may represent the only realistic means of achieving sustainable development.

C. Key Decision-Making Principles

Sustainable development includes several principles for governmental and nongovernmental decision-makers designed to ensure that social, economic and environmental goals are achieved. Perhaps the three most important are integrated decision-making, the polluter-pays principle and the precautionary principle. The polluter-pays principle and the precautionary principle were not contained in the Stockholm Declaration, and integrated decision-making was stated but not explained. Other conventional decision-making principles, including equity and efficiency, would continue to be used, but these three ideas probably are the most essential for sustainable development.

1. Integrated Decision-Making

"In order to achieve sustainable development," the Rio Declaration states, "environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."[266] Integrated decision-making is perhaps the most important of the UNCED decision-making principles. It is also fundamental to effective governance.

Integrated decision-making is a direct response to the current tendency for governments to treat the social, economic and environmental aspects of an issue as separate problems. They are managed by different governmental agencies acting independently and without coordination, and often without even understanding what the others are doing. Governments, for example, give responsibility to particu-

---

[264] *See* ERNST U. VON WEIZSÄCKER & JOCHEN JESINGHAUS, ECOLOGICAL TAX REFORM: A POLICY PROPOSAL FOR SUSTAINABLE DEVELOPMENT 9 (1992); Porras, *supra* note 109, at 33.

[265] *See* Goodland, *supra* note 161, at 12.

[266] Rio Declaration, *supra* note 3, princ. 4. "Principle 4 reflects the emphasis on integration, interrelation and interdependence of environment and development, which form[s] the backbone of sustainable development." *Application and Implementation*, *supra* note 200, ¶ 31; *see also* Rio Declaration, *supra* note 3, princs. 11, 25. Integrated decision-making is reflected in the Framework Convention on Climate Change, *supra* note 9, pmbl., art. 3.4; and the Convention on Biological Diversity, *supra* note 9, arts. 6(b), 10(a).

lar ministries or departments to foster particular kinds of economic development. In addition, governments often provide subsidies and other kinds of economic incentives for such development without considering the environmental or human health consequences.[267] Agriculture subsidies, for example, often support practices that damage soil productivity and contaminate groundwater by encouraging intensive soil cultivation and overuse of fertilizers and pesticides.[268] Countries then use the environmental ministry or agency to limit the resulting damage, which is often difficult or impossible.[269] This tendency to separately consider environmental, social and economic effects is a major reason why governmental efforts often fail, or at least fall significantly short of their social and economic goals.

Integrated decision-making has two meanings in Agenda 21. It is not only a means of ensuring that all three goals are considered; it is also an attempt to ensure that they are achieved.

a. Procedural Integration

Procedural integration is the simultaneous and coherent consideration of economic, environmental and social factors in making a particular decision.[270] In this respect, sustainable development is not a new issue; it is a broader and more comprehensive way of analyzing and acting on all issues.

Agenda 21 recommends that governments review and modify their decision-making processes to "achieve the progressive integration of economic, social and environmental issues."[271] The progressive implementation provision in Agenda 21 indicates that implementation should occur over a period of time, not immediately.[272] Governments are called on to integrate their use of social, environmental and economic data, and to use analytical procedures that will enable simultaneous consideration of a range of impacts.[273] The Rio Declaration also suggests that governments require environmental impact assessments for major projects.[274] Such assessments, like those required by the National Environmental Policy Act in the United States, force

---

[267] *See* OUR COMMON FUTURE, *supra* note 90, at 122-23.

[268] *See id.* at 38-39, 122-23.

[269] *See id.* at 39-40.

[270] *See* Agenda 21, *supra* note 1, ¶ 8.4 ("The primary need is to integrate environmental and developmental decision-making processes."); *see also* OUR COMMON FUTURE, *supra* note 79, at 62 ("The common theme throughout this strategy for sustainable development is the need to integrate economic and ecological considerations in decision making.").

[271] Agenda 21, *supra* note 1, ¶ 8.4

[272] *See supra* note 51 and accompanying text (referring to International Covenant on Economic, Social and Cultural Rights, which has similar language).

[273] *See* Agenda 21, *supra* note 1, ¶¶ 8.5(a)-(b), 8.6.

[274] *See* Rio Declaration, *supra* note 3, princ. 17.

government agencies to consider the environmental and social effects of significant economic projects.

Integrated decision-making is a basic theme in Agenda 21.[275] Agenda 21 recommends that governmental land-use decisions, for example, be based on consideration of economic and social factors, as well as natural resources and ecosystems.[276] In addition, Agenda 21 suggests that legislation should require integrated decision-making by individuals, corporations and others. Integrated decision-making is more efficient and effective than fragmented decision-making or decision-making that gives disproportionate weight to one or two factors. By approaching decisions in this way, governmental and nongovernmental actors can minimize conflicts between goals and ensure that land and other resources are used for the purposes to which they are best suited.[277]

A key feature of integrated decision-making, moreover, is consideration of environmental, social and economic aspects of a particular proposal from the outset.[278] Integrated decision-making can prevent adverse effects from occurring and redirect economic and social activity in a more beneficial direction. It can do so in part by giving nongovernmental actors consistent messages about their actions and how they ought to manage them. Prevention of pollution and other adverse environmental effects also is more economically efficient and protective of natural resources than regulating these effects or cleaning them up.

Procedural integration would greatly improve a nation's ability to further social, environmental and economic objectives. It would increase the portfolio of potential tools and solutions available for a particular problem from those that would be evident by focusing narrowly on its social, economic or environmental aspect. Recycling of paper and metals, for example, can create jobs in urban areas, help reduce energy and materials consumption, and eliminate a potential pollution source. If recycling is seen simply as an environmental matter, the opportunity to connect it to economic development is lost. Because it increases the number of options and enhances the likelihood that particular actions will further multiple goals at the same

---

[275] The only land resources program in Agenda 21, for example, is integrated decision-making. *See* Agenda 21, *supra* note 1, ch. 10. Although it occurs both expressly and by implication throughout Agenda 21, integrated governmental decision-making is emphasized for deserts (ch. 12, subchs. C & D), mountain ecosystems (ch. 13, subch. B), agriculture (ch. 14, subch. A), ocean coastal areas and the marine environment under national control (ch. 17, subch. A), and fresh water resources (ch. 18, subch. A).

[276] *See id.* ¶ 10.3.

[277] *See id.* ¶¶ 10.1, 10.5.

[278] *See, e.g.*, FIVE YEARS AFTER RIO, *supra* note 237, at 4 ("[T]he single most important step towards an improved environment is to *incorporate the environment from the start*, not as an 'add-on' at the end of project analysis or development of macroeconomic policies.") (emphasis in original).

time, procedural integration also makes it more likely that substantive goals will be achieved.

Procedural integration provides an important challenge to countries: developing an analytical framework concerning the manner in which development and environment goals are to be integrated. Countries also will need to develop a coherent analytical framework for decision-making that integrates economic norms (e.g., efficiency, profit maximization), scientific norms (e.g., certainty), and such norms as intergenerational equity and the precautionary approach.[279] Individual countries can decide among three types of methods.[280] To begin with, they could decide that environmental values should be incorporated into economic values and allocated efficiently. Environmental and natural resources laws already have begun the process of this type of procedural integration. These laws have led to substantial growth in the field of environmental economics. Alternatively, countries could decide that ecosystem protection should provide the framework within which social and economic development should occur. This approach is suggested by the growing field of ecological economics, which attempts to blend economics and science. Finally, countries could use an approach that includes social, ethical and even religious justifications.

Environmental economics has been used to compare the economic, environmental and social costs and benefits of environmental and health laws as well as proposed projects such as hydroelectric dams. In economic terms, pollution or degradation of the environment occurs because the economic benefits of development are obvious to its supporters and because the environmental costs are not recognized by the market. Environmental economics attempts to address this problem by giving the environment some economic value.

While the theoretical framework for environmental economics is now fairly well developed,[281] and the contribution of environmental economics to environmental protection is indisputable, sustainable development raises questions about many of the basic premises on which that valuation depends. To establish an economic value of the environment, economists try to determine what people are willing to pay for particular amenities or use surveys to determine what they would be willing to pay.[282] The use of present-generation individual preferences to value the environment, however, is vulnerable to the

---

[279] *See* Donald A. Brown, *The Role of Law in Sustainable Development and Environmental Protection Decisionmaking, in* SUSTAINABLE DEVELOPMENT: SCIENCE, ETHICS, AND PUBLIC POLICY 64-67 (John Lemons and Donald A. Brown eds., 1995).

[280] *See id.* at 67.

[281] *See* Maureen L. Cropper & Wallace E. Oates, *Environmental Economics: A Survey*, 30 J. ECON. LITERATURE 675, 676 (1992) (surveying environmental economic theory as it relates to policy).

[282] *See id.* at 700-11.

argument that such a methodology undervalues the environment. The people, acting for their community, would likely assign a higher economic value to natural systems on whose long-term survival the community depends.[283]

A second premise stems from the reality that the costs and benefits of a proposal will accrue over time. Economists thus ordinarily discount, or give lesser weight to, future costs and benefits than to present costs and benefits.[284] The discount rate is analogous to, and often the same as, the interest rate. Thus, the present value of benefits or costs that will occur in several decades is only a fraction of what they will actually be; if that fractional amount were invested now, it would in several decades be equal in value to the full amount. Current benefits and costs, by contrast, are counted for full value. When present benefits and future costs are compared, discounting provides a built-in preference for the present generation over future generations. Using a very low interest rate to keep future costs comparable with present benefits would be more consistent with intergenerational equity.[285] Finally, economists tend to assume that technology will stay ahead of resource scarcity and can replace natural services.[286] Whether or not technology can prevent resource scarcity, a sustainable development approach assumes that many natural services are irreplaceable.[287]

While it may be possible for environmental economics to respond effectively to these and other issues, alternative approaches are being developed. An interdisciplinary field known as ecological economics originated in the 1980s to integrate ecology and related environmental disciplines with economics.[288] Although it uses economic analysis, ecological economics proceeds from different assumptions. Its initial premises are that the human economy is part of the global ecosystem (not the other way around), that the ecosystem can provide limited resources to humans and absorb only a limited amount of waste, and that a sustainable human future requires respect for those limits.[289]

---

[283] *See* COSTANZA ET AL., *supra* note 166, at 150 (explaining people's susceptibility to social traps); SAGOFF, *supra* note 165, at 77-78, 118-23 (arguing that social regulation should be based on public values).

[284] *See* Daniel A. Farber and Paul A. Hemmersbaugh, *The Shadow of the Future: Discount Rates, Later Generations, and the Environment*, 46 VAND. L. REV. 267, 277-79 (1993) (explaining the concept of the discount rate). The preference is based on human impatience and the opportunity cost of relinquishing present benefits. *See id.* at 280-81.

[285] *See id.* at 304; Cropper & Oates, *supra* note 281, at 726-27.

[286] *See* COSTANZA ET AL., *supra* note 166, at 69.

[287] *See infra* notes 290-91 and accompanying text.

[288] *See* COSTANZA ET AL., *supra* note 166, at 48-51 (discussing the development of ecological economics). Since 1989, the International Society for Ecological Economics has published a peer review journal, *Ecological Economics*. *See id.* at 49.

[289] *See id.* at 79. Because sustainable development involves both intergenerational equity and intragenerational equity, ecological economics is also concerned with the distribution of rights to resources. *See id.* at 70-71. In addition, ecological economists seek to inform the pub-

Ecological economists thus tend to focus on the role of natural capital in human activities and new institutional and legal arrangements that are needed to protect it.

A recent study illustrates the strengths and limitations of this approach. Robert Costanza and others estimated the annual economic value of ecological "services" at an average of $33 trillion, almost twice the current annual global gross domestic product.[290] These services, which are not counted in conventional economic accounting systems, include the regulation of atmospheric chemicals, climate regulation, provision of water supplies and soil formation. Many of these services are irreplaceable. The authors used willingness-to-pay surveys and other environmental economics tools to reach this calculation. Because of the limits of that approach, they concluded that the total figure was probably low.[291] Whatever may be said of the specific dollar amount, the study shows many ways in which humans benefit from natural functions and suggests that the economic value of these services is astronomical. Because this type of analysis generally has not yet been done for specific resources in specific places however, it is difficult to use this insight in decision-making.[292]

Still another approach to procedural integration is based on the premise that social concerns—including morality, aesthetics, culture and politics—are at least as important to decision-making concerning the environment as economic concerns.[293] Because it integrates environmental, economic and social objectives, this approach may be the one most consistent with sustainable development. On this account, the level of environmental protection required for sustainable development should reflect not just individual preferences or community need but also the responsibility of the present generation for future generations' well-being and the public's understanding of the kind of society in which it seeks to live now.[294] Such an approach lends itself, for example, to protection of natural systems and species because God made them, because they have been around for a long time, or for ethical reasons—reasons that are alluded to, but not emphasized, in Agenda 21.[295]

---

lic debate on sustainable development by conducting and disseminating research on existing experiential knowledge of local solutions. *See id.* at 71-72.

[290] *See* Robert Costanza et al, *The Value of the World's Ecosystem Services and Natural Capital*, 387 NATURE 253, 259 (1997).

[291] *See id.*; *see also* Gretchen C. Daily, *Valuing and Safeguarding Earth's Life-Support Systems*, *in* NATURE'S SERVICES 369 (Gretchen C. Daily ed., 1997) (estimating economic value of biodiversity, natural pest enemies, forests, grasslands and other natural features to be "many trillions of dollars annually").

[292] *See* James Salzman, *Valuing Ecosystem Services*, 24 ECOLOGY L.Q. 887, 891-98 (1997).

[293] *See* SAGOFF, *supra* note 165, at 6.

[294] *See id.* at 97-98, 220-24.

[295] *See* Agenda 21, *supra* note 1, ¶¶ 11.13(b), 15.2 (recognizing spiritual value of forests and biological resources); *id.* ¶¶ 6.1, 6.32 (recognizing importance of involving religious or-

Environmental economics, ecological economics and a social or ethical approach do not compose an exhaustive list of the possibilities, and many variations or combinations are possible. But they do suggest the range of choices that developed and developing nations face in procedural integration—even countries that have been wrestling with these problems for decades.

b. Substantive Integration

Substantive integration means that the various decisions affecting particular social, environmental, and economic goals should actually further those goals. Procedural integration enhances the likelihood that a decision will further particular goals but allows major adverse social and environmental effects to be considered and then ignored. Under the National Environmental Policy Act, for example, an American agency may fully consider impacts and alternatives, and decide to go ahead with an environmentally or social damaging project anyway.[296] As a categorical rule, this result is inconsistent with substantive integration.

Substantive integration is a direct result of a goal-driven system of governance; goals are useful only if they affect decision-making. Procedural integration matters only if it produces outcomes that are consistent with social, environmental and economic goals. Agenda 21 calls on governments to move toward water-quality management on a watershed basis, for example.[297] Among other things, that means integration of land use, water use and water pollution control with social and economic development on a watershed-by-watershed basis.[298] Such an approach would require protection of resources or human health from all threats. The protection of watershed resources is frustrated, for example, if water pollution from factories is limited but water pollution from farms is not. Similarly, Agenda 21 urges the integrated provision of drinking water, sanitation, drainage and waste

---

ganizations); *id.* ¶ 31.8 (suggesting importance of maintaining and enhancing "life-support systems for their own sake"); *see also* Donald A. Brown, *The Role of Ethics in Sustainable Development and Environmental Protection Decisionmaking*, *in* SUSTAINABLE DEVELOPMENT: SCIENCE, ETHICS, AND PUBLIC POLICY, *supra* note 279, at 39 (arguing that there is conflict between neoclassical welfare economic views of the value of biodiversity and other ethically-based views).

[296] *See* Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350-52 (1989), *on remand sub nom.* Methrow Valley Citizens Council v. Regional Forester, 879 F.2d 705 (9th Cir. 1989) (holding that the National Environmental Policy Act does not impose a substantive duty on agencies to mitigate adverse environmental effects).

[297] *See* Agenda 21, *supra* note 1, ¶¶ 18.36, 18.38. At the Rio-plus-five meeting, the General Assembly called on countries to give a high priority to integrated watershed management. *See Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 34(a).

[298] *See* Agenda 21, *supra* note 1, ¶ 18.8.

management services in human settlements because all of these things are necessary for human well-being.[299]

Efforts by national agencies and others to further social, economic and environmental goals at the same time are likely to be significantly more efficient than efforts directed at only one goal.[300] More importantly, perhaps, the daunting scope of many of the problems that sustainable development addresses means that they can be resolved only if the government acts efficiently.

At least two major challenges to substantive integration must be overcome. The first is devising legal and institutional frameworks in which all information relevant to particular natural resources, economic sectors and social objectives is considered. Such frameworks could be coordination mechanisms among existing institutions, or they could be entirely new institutions. New Zealand provides an ambitious example: It reorganized local government boundaries to correspond to watersheds.[301]

The other challenge is developing principles for determining appropriate tradeoffs among goals in specific decisions. Agenda 21 does not appear to suggest that every decision ought to further social, economic and environmental goals, much less that every decision ought to further these goals to an equivalent degree. On the other hand, it is reasonably clear that the sum of many decisions ought to further all three goals to an equivalent extent. Agenda 21's recommendation for progressive integration of social, economic and environmental goals also suggests that there should be increasing harmony among goals over time, even synergy.

Tradeoffs are perhaps best understood in the context of the three different kinds of capital that contribute to national and individual well-being: natural, human and human-made. Natural capital includes renewable and nonrenewable resources, living organisms and ecological systems. Human capital is based on education and technology as well as the governmental, social and economic systems that support it. Human-made capital includes factories, farms, equipment and industrial infrastructure such as bridges and power plants.[302]

---

[299] *See id.* ch. 7, subch. D; *see also id.* ¶ 7.36 ("An integrated approach to the provision of environmentally sound *infra*structure in human settlements . . . can improve the quality of life, increase productivity, improve health and reduce the burden of investments in curative medicine and poverty alleviation.") (emphasis added).

[300] *Cf.* AL GORE, NATIONAL PERFORMANCE REVIEW, FROM RED TAPE TO RESULTS: CREATING A GOVERNMENT THAT WORKS BETTER AND COSTS LESS (1993) (emphasizing similar themes for governance and environmental protection); DAVID OSBORNE & TED GABLER, REINVENTING GOVERNMENT 299-305 (1992) (same).

[301] *See, e.g.*, Owen Furuseth & Chris Cocklin, *An Institutional Framework for Sustainable Resource Management: The New Zealand Model*, 35 NAT. RESOURCES J. 243, 256-57 (1995).

[302] *See* Dennis M. King & John H. Cumberland, Making Sense of Sustainability in Five Easy Steps 9 (draft, April 5, 1995, on file with author).

Sustainable development is premised on the need to protect natural resources but recognizes that many, if not most, of these resources will also be used by humans. The conversion of renewable resources such as living trees to lumber, for example, involves the conversion of natural capital to human-made capital. The same happens for nonrenewable resources when oil is converted into a synthetic carpet. While some tradeoffs are necessary in individual decisions, the challenge is to limit tradeoffs in a way that will allow for the regeneration of renewable resources and the reuse or replacement of nonrenewable resources.[303] Nations should thus preserve and enhance natural capital as well as human and human-made capital.

Ultimately, the determination of tradeoffs has an ethical dimension that should inform a nation's environmental protection goals. Neither Agenda 21 nor the Rio Declaration contains a succinct statement of the ethical principles required for living sustainably on the planet.[304] An Earth Charter containing ethical principles for sustainable living is being drafted, and its sponsors hope to eventually submit the charter to the General Assembly for approval.[305] General Assembly approval would give the Earth Charter the same status as Agenda 21 and the Rio Declaration, and enhance the visibility of ethical reasons for environmental protection.[306]

2. Polluter-Pays Principle

The polluter-pays principle is necessary to ensure that social, economic and environmental goals are realized harmoniously; it is essential to integrated decision-making. According to the polluter-pays principle, governments should require polluting entities to bear the costs of their pollution rather than impose those costs on others or on

---

[303] *See* COSTANZA ET AL., *supra* note 166, at 100-07 (arguing that natural resources and human-made capital are complements, not substitutes).

[304] *See* Steven C. Rockefeller, *The Earth Charter Process*, *in* EARTH ETHICS, Winter/Spring 1997, at 3.

[305] *See id.; see also* Earth Charter Commission, *The Earth Charter (Benchmark Draft)*, *in* EARTH ETHICS, *supra* note 304, at 1. The first principle stated in this draft is that "[e]arth, each life form, and all living beings possess intrinsic value and warrant respect independently of their utilitarian value to humanity." *Id.* Aldo Leopold provided a simple and well-known way of expressing such an ethic: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." ALDO LEOPOLD, A SAND COUNTY ALMANAC 240 (1948).

[306] Although the General Assembly is only empowered to make recommendations to nations, *see* U.N. CHARTER art. 10, its recommendation would reflect the political judgment of the world's nations that these ethical principles ought to be considered for adoption. Because such resolutions are not international law but could be used to create international law, they are known as "soft law." *See* BURNS H. WESTON ET AL., INTERNATIONAL LAW AND WORLD ORDER: A PROBLEM-ORIENTED COURSEBOOK 159-68 (3rd ed. 1997) (citing and analyzing a range of opinions). Resolutions adopted by international conferences are not significantly different from resolutions adopted by the General Assembly. Both kinds of resolutions are approved by national delegates after some amount of negotiation and debate.

the environment.[307] Economic development, in short, should not come at the expense of social development, natural resources protection or even other types of economic development. Use of the polluter-pays principle should thus result in greater efficiency. The polluter-pays principle also would prevent the involuntary wealth redistribution that occurs when some benefit at the expense of others.

The Organization for Economic Cooperation and Development (OECD), which is composed of the world's developed nations, originally enunciated the principle in 1972 as a means of allocating costs for pollution control.[308] In practice, however, it is difficult to properly allocate costs without also asserting liability against particular entities for those costs. The principle is thus broadly understood to include both cost- and liability-allocation. Because the use of goods and services often results in environmental or social costs, the principle also is referred to as the user-pays principle.

Some limited exceptions to the principle are recognized. The 1972 OECD statement recognizes exceptions for research and development of technological innovation, well-defined transitional periods when environmental costs are first imposed, and countries or regions that are economically depressed.[309] These latter two exceptions generally are consistent with the principle of differentiated responsibilities for developed and developing countries. These exceptions, however, are relatively narrow; they do not include general subsidies or tax breaks for polluting entities.[310] The Rio Declaration would allow exceptions when they are in the public interest and do not distort international trade and investment.[311] Because externalized costs provide an indirect subsidy that may give the benefited entity an international trade advantage,[312] and because the Rio Declaration recognizes differentiated responsibilities, the Rio Declaration appears generally consistent with the 1972 OECD statement.

---

[307] Although the principle has been formulated in somewhat different ways in various contexts, the Rio Declaration is representative: "National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment." Rio Declaration, *supra* note 3, princ. 16. *See generally* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, THE POLLUTER PAYS PRINCIPLE (1975) (tracing the development of the polluter-pays principle); PRINCIPLES, *supra* note 15, at 213-17 (same).

[308] *See* Organization for Economic Cooperation and Development, Guiding Principles on the Environment, *reprinted in* 11 INT'L LEGAL MATERIALS 1172 (1972); Sanford E. Gaines, *The Polluter-Pays Principle: From Economic Equity to Environmental Ethos*, 26 TEX. INT'L. L.J. 463, 467-68 (1991).

[309] *See* Organization for Economic Cooperation and Development, *supra* note 308, at 1172.

[310] *See id.*

[311] *See* Rio Declaration, *supra* note 3, princ. 16.

[312] *See, e.g.*, Wirth, *supra* note 111, at 643-44 (stating that exporting country's "failure to implement the Polluter-Pays Principle could be treated as a pollution subsidy that distorts international trade").

If implemented by governments, the polluter-pays principle would further procedural integration by providing private decision-makers with a simple means of considering a great deal of information. Without it, private actors could ignore social and environmental costs, making a decision based simply on price. More conscientious decision-makers would need to undertake the daunting tasks of gathering information about social and environmental costs and then weigh those costs against the economic price of goods and services. When the price of goods and services reflects their environmental and social costs, however, these separate tasks are unnecessary. Because decision-makers prefer the least expensive goods and services when given a choice among goods and services of comparable quality, the polluter-pays principle makes it more likely that the choices they make in their self-interest also will further sustainable development. The polluter-pays principle thus furthers substantive integration as well. The whole point of including social and environmental effects in the economic or legal cost of goods and services is to ensure better decisions.

The principle of differentiated responsibilities is largely an outgrowth of the polluter-pays principle. Because they have made the greatest contribution to most global environmental problems, developed countries should pay for the cleanup.[313] The equitable considerations intrinsic to the polluter-pays principle also suggest that it is appropriate for developed countries, whose development is imposing significant negative externalities on the environment of both developed and developing countries, to help developing countries meet their environmental obligations.

3. Precautionary Approach

"In order to protect the environment," the Rio Declaration states, "the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[314] The precautionary approach or principle

---

[313] *See, e.g.*, Cheng Zheng-Kang, *Equity, Special Considerations, and the Third World*, 1 COLO. J. INT'L ENVTL. L. & POL'Y 57, 62 (1990) (arguing that developed countries should solve the ozone depletion problem because they produce 98% of CFC-11, a major ozone depleting chemical).

[314] Rio Declaration, *supra* note 3, princ. 15. For an exhaustive analysis of the principle in this and other contexts, see HARALD HOHMANN, PRECAUTIONARY LEGAL DUTIES OF MODERN INTERNATIONAL ENVIRONMENTAL LAW (1994). *See also* THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL LAW: THE CHALLENGES OF IMPLEMENTATION (David Freestone and Ellen Hey eds., 1996); PRINCIPLES, *supra* note 15, at 208-12; James Cameron & Juli Abouchar, *The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment*, 14 B.C. INT'L & COMP. L. REV. 1 (1991).

responds to an important problem in decision-making—the absence of complete scientific information concerning the environment. If decisions are made based only on available information, it is highly likely that they will damage the environment, perhaps severely or irreparably. Because the impetus for economic development tends to be strong, the environment has been protected only to the extent scientific information exists.

Instead of assuming that important natural systems are resilient or invulnerable, the precautionary principle presumes their vulnerability.[315] By giving the benefit of the doubt to the environment when there is scientific uncertainty, the precautionary principle would shift the burden of proof from those supporting natural systems to those supporting development.[316] The principle is premised on the preference of preventing pollution to subsequent remediation, the relevance of scientific data to governmental decision-making and the obligation to take precautionary measures that are in proportion to the potential damage.[317]

The approach also reflects an intuitively sound approach to decision-making that individuals regularly use to avoid danger or trouble. In many cases, considerable scientific uncertainty exists about the environmental effects of existing or planned human activities. Because scientific knowledge is usually developed incrementally, scientific norms require a high level of certainty about the accuracy of new information—usually more than 95%.[318] Because of the pervasive role of scientific information and scientific norms, government agencies and others often use scientific certainty about a problem as a necessary threshold for environmental decision-making. In addition, economic interests opposed to a particular proposal, such as limits on the release of greenhouse gases, implicitly insist on scientific norms when they assert that there is scientific uncertainty about global warming.

In other contexts, a lower hurdle than scientific certainty is commonplace. The "more-likely-than-not" standard for proximate cause in common-law tort systems requires only a certainty of greater than

---

[315] *See* ANTHONY M.H. CLAYTON & NICHOLAS J. RADCLIFFE, SUSTAINABILITY: A SYSTEMS APPROACH 213 (1996).

[316] *See* Bernard Weintraub, *Science, International Environmental Regulation, and the Precautionary Principle: Setting Standards and Defining Terms*, 1 N.Y.U. ENVTL. L.J. 173, 178-80 (1992); Wirth, *supra* note 111, at 634.

[317] *See* James E. Hickey, Jr., & Vern R. Walker, *Refining the Precautionary Principle in International Environmental Law*, 14 VA. ENVTL. L.J. 423, 436 (1995). The principle does not answer certain questions, however: the level of potential damage, the level of certainty required, and the circumstances under which the government would act (as opposed to the circumstances under which it would refrain from acting).

[318] *See* CARL F. CRANOR, REGULATING TOXIC SUBSTANCES: A PHILOSOPHY OF SCIENCE AND THE LAW 12-48 (1992).

50%.[319] Similarly, a court can issue an injunction if there is a "dangerous probability" that the threatened harm will occur.[320] Courts, of course, are not concerned with adding to scientific knowledge. They need to decide claims that people are being harmed or are about to be harmed, and issue appropriate relief. Government agencies and legislatures are in a similar situation, even though they deal with much larger numbers of people and more substantial natural resources than those involved in an ordinary lawsuit. While a respectable scientific basis for a decision is nonetheless necessary, the science need not be complete. In a basic sense, the most important contribution of the precautionary principle is removal of a handicap for environmental decision-making that is not ordinarily asserted for decision-making related to other aspects of development.

The precautionary principle is especially important for sustainable development because the carrying capacity of the global environment as well as regional ecosystems is mostly unknown.[321] Although it is generally agreed that the environment can tolerate some abuse, there is a tendency to believe and act as if the environment can tolerate a particular human activity or set of activities unless scientific information demonstrates otherwise. Because the quality of human life ultimately depends on these natural resources, we should be careful to protect them.

The precautionary principle also reinforces, and is reinforced by, integrated decision-making and the polluter-pays principle. Because environmental protection goals are to be considered and furthered in decision-making, the precautionary principle gives the protection of natural systems full weight in decision-making concerning social and economic goals. Because of the obvious relationship between scientific information and environmental protection, the precautionary approach could have profound consequences for sustainable development decision-making.[322] Similarly, the precautionary principle would include uncertain environmental costs in the externalities calculation for the polluter-pays principle. These three principles, taken together, underscore the need for a substantial change in the trajectory of conventional development. The sustainable development frame-

---

[319] *See* W. PAGE KEATON ET AL., PROSSER AND KEATON ON THE LAW OF TORTS § 41, at 269 (5th ed. 1984) ("The plaintiff must introduce evidence which affords a reasonable basis for the conclusion that it is more likely than not that the conduct of the defendant was a cause in fact of the result. He need not prove the case beyond a reasonable doubt.").

[320] *See, e.g.*, Village of Wilsonville v. SCA Services, Inc., 426 N.E.2d 824, 836 (Ill. 1981) (upholding issuance of injunction because there was a "dangerous probability" that threatened or potential injury from chemical waste landfill would occur). It may even be appropriate for a court to issue an injunction where there is a small possibility of a catastrophic outcome. *See id.* at 842 (Ryan, J., concurring).

[321] *See* BEYOND THE LIMITS, *supra* note 247, at 1-14.

[322] *See* Maggio & Lynch, *supra* note 52, at 75.

work provides a powerful set of tools for protecting the environment and natural resources.

III. LEGAL AND POLICY CHANGES AND INSTRUMENTS

An effective legal framework is necessary for sustainable development.[323] Agenda 21 calls on governments to adopt and implement laws and policies that successfully guide both private and governmental decisions for sustainable development, and to regularly assess and modify them when appropriate to improve their effectiveness.[324] Governments also should establish strategies to ensure compliance with their laws as well as procedures for judicial and administrative review.[325] These recommendations suggest a two pronged approach. Each country should conduct an ongoing review and classification of existing laws to identify and repeal or modify laws that hinder sustainable development. In addition, countries should adopt laws and policies that are necessary to foster sustainable development. In both cases, they need to make sure that these changes are implemented.

Most countries now have in place legislation and corresponding administrative authority to control pollution from industrial and other activities, and to limit the manner in which certain natural resources are exploited. In developed countries such as the United States, significant pollution control laws have been in place for several decades; many developing countries are putting similar controls in place. Most countries also have some kind of legislation to protect wildlife, forests, soil, fisheries and other natural resources. Whatever their effectiveness in particular nations, these laws represent a starting point for the environmental and natural resources protection part of sustainable development. In addition, the legal system in most countries supports aspects of the other four components of sustainable development, though to varying degrees.

A national sustainable development effort would build on these efforts but would modify them in several ways. To begin with, such efforts would need to consider all natural resources and environmental systems, not just particular problems. In addition, these ef-

---

[323] *See* Agenda 21, *supra* note 1, ¶ 8.16(b) (stressing the importance of a national legal and policy framework for sustainable development).

[324] *See id.* ¶ 8.13 ("Laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action . . . ."). The design and implementation of this framework, particularly for developing countries, may require legal and other assistance, including training, from nongovernmental organizations, academic institutions and others; such assistance should be provided as needed. *See id.* ¶¶ 8.19, 8.20. Agenda 21 also calls for improvements in reporting for legal and other measures taken by governments in response to international agreements. *See id.* ¶ 8.22. *See generally* WORLD BANK, WORLD DEVELOPMENT REPORT 1992: DEVELOPMENT AND THE ENVIRONMENT (1992) (outlining detailed policy and legal prescriptions for sustainable development).

[325] *See* Agenda 21, *supra* note 1, ¶¶ 8.18, 8.21.

forts should reflect procedural integration, the polluter-pays principle and the precautionary principle more fully than they do now, even in the environmental and natural resources laws of developed countries.[326] These efforts would also be more goal-driven. As the National Environmental Policy Act indicates, environmental laws often tend to emphasize process. National efforts also would require greater integration of decision-making for economic sectors, natural resources and social issues. The bedrock principle in such efforts would be the conservation and restoration of natural systems and resources. Developed countries also would need to greatly reduce their consumption of materials and energy without compromising their economic and social well-being.

These differences mean that sustainable development is not going to be achieved simply by implementing in developing countries the same kind of pollution control laws that currently exists in developed countries. As important and necessary as these laws are, they do not reflect the range or depth of actions necessary for protection of the environment and natural resources, nor are they necessarily the most economically efficient means of achieving that protection. The basic reality is that we have little, if any, present or historical experience with technologically advanced societies that are ecologically sustainable. As a consequence, the analytical and legal tools needed for sustainable development are at best partially understood and tested.[327] Achieving sustainable development is thus not simply a matter of using existing tools, or even tinkering with those tools. Countries will need to apply lessons learned in one area to significantly different areas and, to a large extent, consider legal and policy approaches that are not now even fully conceptualized. In addition, they will need to develop laws that provide a transition from unsustainable to sustainable development without materially compromising their existing social and economic achievements.

Because of the urgency of the problems addressed by sustainable development, lawmaking for sustainable development should be guided by five principles. First, every significant legislative or policy-making effort should be regarded as an opportunity to advance development *and* environment goals. This results from the need for integrated decision-making. Perhaps the key feature of this approach is that all laws and policies should reward sustainable behavior and penalize or at least fail to reward unsustainable behavior.[328] Without question, environmental legislation of the traditional kind will provide

---

[326] *See, e.g.*, CELIA CAMPBELL-MOHN ET AL., ENVIRONMENTAL LAW FROM RESOURCES TO RECOVERY (1993) (analyzing lack of systemic approach to economic activities in U.S. laws).

[327] *See, e.g.*, Salzman, *supra* note 18, at 1255 ("Over the past twenty-five years, no country's laws have addressed the environmental impacts of consumption in a systematic manner.").

[328] *See* CLAYTON & RADCLIFFE, *supra* note 315, at 236 ("The most fundamental point [is] to ensure that people are not penalised for good behaviour and rewarded for bad.").

part of the basis for the law of sustainable development.[329] But so will other laws, including those not usually associated with environmental protection, such as insurance and banking.[330]

Second, the entire range of tools should thus be considered for any particular problem or goal, not just a subset of these tools. It may even be appropriate to use a combination of tools. These instruments also should be harmonized with each other. A major problem in environmental law is a high level of reliance on regulatory instruments and relatively little use of other legal tools. This is particularly significant when taxes and subsidies give business a message that contradicts the regulatory laws. Such inconsistencies are wasteful and frustrate the achievement of national goals.

Third, laws and policies should encourage and guide a society's best creative efforts toward sustainable development. As Agenda 21 recognizes, the problems are too large and serious, and require too much information about local conditions, for the national government alone to solve. Laws and policies should thus engage all parts of society in the realization of national goals. To do so, legal systems should provide coherent short-term incentives that are consistent with long-term goals for sustainability.[331] This is especially important because so much unsustainable behavior is based on short-term incentives that contradict long-term needs. To provide effective incentives, however, a country must have a vision of a sustainable future and must be able to express that vision with a reasonable level of specificity.

Fourth, substantial public participation in both the creation and implementation of local and national laws concerning sustainable development is essential. Citizen participation can encourage positive governmental efforts, discourage negative governmental efforts and ensure that governmental activities are sensitive to those who are affected. Nations can, of course, involve citizens in the design and implementation of sustainable development strategies, relying primarily on legislative and administrative processes. While access to those processes is important, access to the courts is equally important. In a recent Filipino case, for example, a class of minors sued the government to end its practice of issuing timber license agreements that resulted in the logging of the nation's rainforests, with attendant dislocation of indigenous cultures as well as environmental and economic

---

[329] *See* Rio Declaration, *supra* note 3, princ. 11 ("States shall enact effective environment legislation.").

[330] *See* FUTRELL, *supra* note 170, at 16-17 (examining the effects various "non-environmental" statutes have on sustainability).

[331] *See* COSTANZA ET AL., *supra* note 166, at 154. Because of the precautionary principle, "the focus should be on policies that are aimed at assuring sustainability over as wide a range of future conditions as possible." *Id.* at 106.

losses. Their complaint alleged that they brought suit on their own behalf as well as that of future generations. The Supreme Court held that they stated a valid claim because the national constitution, which guarantees "the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature," imposed a duty on the government to refrain from injuring the environment.[332] The court also invoked the principle of intergenerational equity to rule that they had standing to sue on behalf of succeeding generations.[333] In so doing, the court indicated that the government has a duty to future generations. In decisions such as this one, the language and framework for sustainable development become part of a nation's legal culture, and therefore become capable of being enforced by its citizens.

Fifth, sustainable development laws and policies must be based on, and must foster, efficient and effective learning about what works and what does not work. Comparative law is a practical means of learning from human experience in the development and implementation of laws because it examines the effectiveness of legal tools used in other jurisdictions to address the same problem in one's own jurisdiction.[334] Agenda 21 properly recognizes that comparative law provides a practical and efficient means of facilitating sustainable development because it uses successful experiences in specific jurisdictions as a basis for writing and implementing laws in others.[335] The urgency of the problems sustainable development addresses makes it particularly important to learn from experience.

The laws themselves thus need to be accompanied by mechanisms for monitoring their own effectiveness. Experiential learning of this kind is a public good, and much of it is unlikely to be provided by the private sector.[336] Such monitoring will enable governments to make appropriate adjustments and enable other governments to learn from their experience.

Governments also can foster experiential learning in the private sector and at the local level by encouraging or requiring procedural

---

[332] Oposa v. Factoran, 224 S. Ct. Reps. Ann. 792, 804-05 (Phill. 1993).

[333] *See id.* at 802-03.

[334] *See* KONRAD ZWEIGERT & HEIN KÖTZ, INTRODUCTION TO COMPARATIVE LAW 28-46 (Tony Weir trans., 2d rev. ed. 1992) (discussing the use of comparative law to evaluate human experiences).

[335] *See* Agenda 21, *supra* note 1, ¶¶ 8.19, 8.20; Nicholas A. Robinson, *Comparative Environmental Perspectives on Legal Regimes for Sustainable Development*, 3 WIDENER L. SYMP. J. (forthcoming, 1998). States are also encouraged to share scientific information, technology, and other information. *See, e.g.*, Rio Declaration, *supra* note 3, princ. 9 (encouraging cooperation to share scientific and technological knowledge).

[336] *See* KAI N. LEE, COMPASS AND GYROSCOPE: INTEGRATING SCIENCE AND POLITICS FOR THE ENVIRONMENT 89, 127 (1993) (stressing the importance of the government's ability to monitor the effectiveness of laws and actions); *see also* Agenda 21, *supra* note 1, ¶¶ 8.50-8.54 (recommending that countries improve data and monitoring for sustainable development).

integration. Procedural integration can educate people and institutions representing particular social, environmental or economic interests about people and institutions that represent other interests, and can increase the likelihood of problem solving in which all interests are fully addressed. Because it can encourage creative and novel means of problem solving, procedural integration is one of the most important things that governments can encourage.[337]

A. Repeal or Modification of Laws and Policies that Foster Unsustainable Development

Most, if not all, governments currently have laws and policies that encourage, support or provide incentives for public and private activities that are not sustainable. Before governments even begin to act to foster sustainable development, they need to recognize that they likely have acted in a variety of ways to discourage it. Sustainable development is not possible unless those laws and policies are modified or repealed.[338] Agenda 21 recognizes the existence of such instruments in most countries, particularly in the form of tax incentives and subsidies. The CSD attributes a "large measure" of the blame for the accelerating rate of natural resources degradation throughout the world "to the malign influence of policy: ineffective or preferential land and water policies, distort[ed] pricing signals and inappropriate investment decisions."[339]

Subsidies are perhaps the most obvious incentive for unsustainable development. Subsidies are measures that reduce costs for producers and consumers below the level they would otherwise pay in the market. Subsidies include direct government expenditures, tax subsidies and the public provision of goods and services below market cost.[340] Governments of developed and developing countries annually provide hundreds of billions of dollars of subsidies for unsustainable energy production, road transport, water use and agriculture.[341] In many countries, subsidies keep energy and water prices

---

[337] Interview with William A. McDonough, Dean, University of Virginia School of Architecture (Feb. 4, 1998).

[338] *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, ENVIRONMENTAL TAXES AND GREEN TAX REFORM 19 (1997) (describing removal of legal support for unsustainable development as equal in importance to enactment of laws fostering sustainable development).

[339] *Global Change and Sustainable Development, supra* note 62, ¶ 212.

[340] *See* A.P.G. de Moor, *Perverse Incentives: Subsidies and Sustainable Development (Summary)* (visited Nov. 15, 1997) <http://www.ecouncil.ac.cr/rio/focus/report/english/subsidies/>.

[341] *See id.* Because of limited data, not all subsidies in those sectors have been calculated. *See id.; see also* Michael Potier, *Integrating the Environment and the Economy, in* SUSTAINABLE DEVELOPMENT: OECD POLICY APPROACHES FOR THE 21ST CENTURY 23-25 (Marilyn Yakowitz ed., 1997) (describing OECD country subsidies for agriculture, industry, electricity, traffic, water use and fisheries).

artificially low, encouraging inefficiency and waste.[342] Subsidies also have played a major role in creating and supporting unsustainable land use patterns. Road users pay only 79% of the costs of road infrastructure in the United States, for example, which means that taxpayers pay the rest.[343] Taxpayers thus help subsidize new and improved roads that contribute to suburban sprawl, automobile air pollution and energy consumption.[344]

When this kind of intervention occurs, the government contradicts the polluter-pays principle in two ways: by paying the polluter to pollute and by allowing the costs of this pollution to be borne by others. In effect, subsidies for unsustainable development create wealth for some at the expense of others. Moreover, because these subsidies create a powerful economic incentive for unsustainable behavior, it may not be possible for regulation or other tools to counteract their effects. The environmental and social costs of such subsidies may require further government intervention and thus more public cost. Because environmental degradation often can not be fully remedied, the costs of such degradation may continue for a significant time.

A government's review of its laws and policies thus needs to include a determination of the extent to which it already encourages and supports unsustainable development. Elimination of subsidies would reduce governmental costs and help move a country toward sustainable development without creating new government programs.[345] However, where governments are already providing financial incentives for unsustainable development, accurate and reliable public information about such incentives is essential to the success of any effort to reduce or eliminate them. Regulatory laws concerning the environment are fairly well known in most countries. Subsidies and tax laws that affect corporate decision-making, however, are less transparent to the public; they often occur indirectly, and their overall economic effect is rarely calculated, much less shared with the public.

B. Adoption of Laws and Policies to Foster Sustainable Development

At least six major legal and policy tools are available to foster sustainable development. These tools suggest both the breadth of any

---

[342] *See Global Change and Sustainable Development*, *supra* note 62, ¶¶ 69, 109, 147.

[343] *See* JAMES J. MACKENZIE ET AL., THE GOING RATE: WHAT IT REALLY COSTS TO DRIVE 9-12 (1992) (charting the increasing cost of maintaining U.S. roadways).

[344] "In implementing its policies, the federal government promotes development with one hand and regulates it with the other. Development subsidies often undermine expensive environmental protection efforts. . . . Subsidized timber sales subvert the Endangered Species Act, taxpayer supported energy projects promote air pollution, and below-cost mining sales increase water pollution." FUTRELL, *supra* note 170, at 11.

[345] *See* FIVE YEARS AFTER RIO, *supra* note 237, at 10 (discussing how reduction and elimination of subsidies are common methods of policy reform).

serious governmental effort and the importance of ensuring that various laws and policies are consistent in their support for sustainable development.

1. Planning

A system based on goals requires a means for assuring that they are realized. Planning needs to be undertaken to further various goals and to ensure consideration of relationships among goals. Instead of simply responding to each crisis as it comes, the sustainable development goals suggest the importance of looking ahead, deciding what kind of world we want to live in and how to get there. Planning provides the link between goals and results. By considering all aspects of a problem from the beginning, planning makes it more likely that development and environment goals will be reconciled.[346] Planning to prevent problems also is less costly and more effective than the use of regulatory tools to control or clean up problems once they have been created.

For all its strengths, planning also is associated with top-down governance in Soviet-bloc countries by planners who were supposed to have perfect current knowledge and the ability to anticipate all future events. Of course, planners do not have that knowledge or ability, especially for the wide range of matters covered by Agenda 21.[347] Nor is government by planners likely to be democratic. Fortunately, that is not the kind of planning recommended in Agenda 21 and the Rio Declaration.

To begin with, Agenda 21 recommends a national strategy, not just a formal plan. Although "strategy" and "plan" have similar meanings, strategy connotes a greater emphasis on achieving results and perhaps more flexibility in doing so.[348] The purpose of a strategy is to "mobilize and focus a society's efforts to achieve sustainable development."[349] Countries have used a variety of means to develop and begin to implement such strategies.[350] Agenda 21's emphasis on

---

[346] *See* Stockholm Declaration, *in Human Environment*, *supra* note 82, princ. 14 ("Rational planning constitutes an essential tool for reconciling any conflict between the needs of development and the need to protect and improve the environment.").

[347] *See* Jacob Scherr & David Barnhizer, *The Failure of Agenda 21*, ECODECISION, Spring 1997, at 33 (detailing the drawbacks of Agenda 21).

[348] *See* AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1383, 1775 (3d ed. 1992).

[349] JEREMY CAREW-REID ET AL., STRATEGIES FOR NATIONAL SUSTAINABLE DEVELOPMENT: A HANDBOOK FOR THEIR PLANNING AND IMPLEMENTATION 25 (1994).

[350] *See id.* at 33-50; *see, e.g.*, EXECUTIVE SECRETARIAT OF THE COMMISSION FOR SUSTAINABLE DEVELOPMENT POLICIES AND THE NATIONAL AGENDA 21, TOWARDS BRAZIL'S AGENDA 21: PRINCIPLES AND ACTIONS 1992-97 (1997); GOVERNMENT OF JAPAN, NATIONAL ACTION PLAN FOR AGENDA 21 (1992); MINISTRY OF THE ENVIRONMENT, SWEDEN, FROM ENVIRONMENTAL PROTECTION TO SUSTAINABLE DEVELOPMENT: NATIONAL REPORT ON THE IMPLEMENTATION OF AGENDA 21 (1997); SECRETARIAT, GERMAN BUNDESTAG ENQUETE

local or regional approaches whenever feasible also suggests that a national strategy would be limited to issues best addressed at the national level. Similarly, Agenda 21's recommendation that every sector of society be actively engaged in the work of sustainable development suggests substantial public participation in the development and carrying out of national strategies.

In addition, the planning process envisioned by Agenda 21 is based on adaptive management. Adaptive management is a strategy for achieving natural resources protection and other goals in which decision-makers and implementers are constantly monitoring and learning about the effects of their actions, correcting errors, improving their understanding and making adjustments.[351] As in all planning efforts, the limited information available to decision-makers means that contingencies need to be prepared for, and that adjustments will need to be made over time based on new and perhaps unanticipated information and events.[352] Agenda 21 thus recommends progressive efforts toward sustainable development; continued monitoring of decisions for their social, economic, and environmental impacts; and flexible planning approaches that enable adjustments based on new information or problems.[353] An incremental approach may be particularly attractive to developed countries because we can not fully comprehend what a sustainable industrial society would be like. At each step, hopefully, it will come more clearly into view, and states will have a better idea of what to do next.[354] It is also possible—even desirable—to approach sustainable development by addressing discrete problems, even though integrated decision-making would expand the range of considerations and goals. Indeed, the revised CSD process, in which national efforts on specific issues are subject to annual reviews,[355] suggests the utility of that approach.

COMMISSION ON THE "PROTECTION OF HUMANITY AND THE ENVIRONMENT," THE CONCEPT OF SUSTAINABILITY: PREREQUISITES FOR TOMORROW'S SOCIETY (1997); SOCIALIST REPUBLIC OF VIETNAM, FIVE-YEAR IMPLEMENTATION OF AGENDA 21 (1997); Ben Boer, *Institutionalising Ecologically Sustainable Development: The Roles of National, State, and Local Governments in Translating Grand Strategy into Action*, 31 WILLAMETTE L. REV. 307, 342-357 (1995) (describing development and implementation of Australian sustainable development strategy).

[351] *See* LEE, *supra* note 336, at 9.

[352] Even Agenda 21, and the internationally recognized means of reconciling environment and development, will likely evolve over time based on changing needs and circumstances. *See* Agenda 21, *supra* note 1, ¶ 1.6. Indeed, as the CSD process, international conferences, and the Kyoto Protocol demonstrate, those changes already have begun to occur.

[353] *See* Agenda 21, *supra* note 1, ¶¶ 8.4-8.7 (stressing cooperation, information collecting and institution strengthening as goals in the attempt to integrate the economy and the environment).

[354] *See generally* CHARLES LINDBLOM, THE POLICY MAKING PROCESS (1968) (describing need for incremental development of policies based on experience). On the other hand, many of the problems that sustainable development addresses are so pressing and so severe that more far-reaching measures may seem appropriate.

[355] *See supra* text accompanying notes 191-94.

The need to change laws and policies in response to new information or different circumstances is necessarily part of the transition to a sustainable society, and it will continue even after the transition. The dynamic quality of both human activities and natural systems provides much of the reason. As human economic and social activities change over time, and as technology evolves, the actions needed to ensure sustainability also will change.[356] Sustainable development will thus need to become a permanent and integral part of each country's legal and institutional framework. Natural systems, too, are dynamic and changing even in the absence of human intervention.[357] Sustainable management of natural resources means constantly anticipating and responding to population fluctuations for fish and animals, differences in weather patterns and other manifestations of a changing environment. This challenge is complicated by human effects on those resources.[358] We do not know the precise manner, timing or severity of future environmental responses to various human actions.[359] Moreover, as scientific understanding of particular problems changes, our approach to dealing with them may also change.[360] Because sustainable development is a process of striving toward goals whose realization will require constant monitoring and

---

[356] *See Agenda for Development, supra* note 1, ¶ 154; *see also* Kenneth L. Rosenbaum, *The Challenge of Achieving Sustainable Development Through Law*, 27 ENVTL. L. REP. (ENVTL. L. INST.) 10,455, 10,458 (1997) ("[S]ustainable development is a moving target [because as] our use of resources changes, the law will have to keep pace."). Perhaps the most important development since UNCED, for example, has been the huge infusion of private capital into developing countries. Agenda 21 does not address the question because it was not then an important issue, and the Programme for the Further Implementation of Agenda 21 does not address it because delegates could not agree.

[357] *See generally* DANIEL A. BOTKIN, DISCORDANT HARMONIES: A NEW ECOLOGY FOR THE TWENTY-FIRST CENTURY (1990).

[358] *See, e.g.*, National Forest System Land and Resource Management Planning, 60 Fed. Reg. 18,886 (1995) (giving notice of proposed rulemaking for incorporating ecosystem management into national forest management, and suggesting several different options for doing so); P.A. Larkin, *An Epitaph for the Concept of Maximum Sustained Yield*, 106 TRANSACTIONS OF THE AM. FISHERIES SOC'Y 1 (1977) (explaining ecological limitations to managing fisheries for a constant yield).

[359] *See* Harvey Brooks, *The Typology of Surprises in Technology, Institutions, and Development, in* SUSTAINABLE DEVELOPMENT OF THE BIOSPHERE 325 (W.C. Clark and R.E. Munn eds., 1986). Actions to foster sustainable development will likely generate unpredicted and undesirable outcomes requiring correction. Among other factors, this is due to their multidisciplinary and multisectoral nature, their combination of monetary and nonmonetary factors, and their long term ramifications. *See* CLAYTON & RADCLIFFE, *supra* note 315, at 190-92.

[360] *See* Henry Lee, *supra* note 179, at 8-9. For example, the U.S. Forest Service has long used a goal of suppression to deal with forest fires. Because it is now evident that this policy results in the accumulation of large amounts of dead wood on the forest floor that increase the heat and destructive force of inevitable fires, and because lesser fires occur naturally as a result of lightning strikes, the U.S. Forest Service has changed its suppression policy to allow controlled burns.

adjustment, the domestic legal system supporting it can never be complete or final.[361]

The Agenda 21 approach to planning is also based on the use of a variety of policy and legal instruments for the achievement of national goals, including but certainly not limited to planning.[362] In many cases, for example, a planning effort addressing a specific problem will result not in a written plan but in the adoption or repeal of legislation or policies.

Finally, Agenda 21's orientation toward action is inconsistent with any kind of national plan that gathers dust on a shelf. Agenda 21's emphasis on particular legal and policy instruments suggests the importance of making changes in the real world, where such instruments matter a great deal. The potential for futile or merely symbolic efforts is of particular concern with national councils for sustainable development, which tend to operate outside normal channels of governmental decision-making and often lack legal authority to make or implement decisions on behalf of national governments.[363] Although such councils can help develop a national consensus on sustainable development, these councils and other planning efforts mean little unless they are connected to the work of governance in their countries.[364]

2. *Regulation*

Agenda 21 recognizes the importance of traditional regulatory approaches to environmental protection because the market, by itself, can not adopt binding limits on individual or corporate behavior. Nor can the market establish the necessary legal procedures for the achievement of social, economic and environmental goals. Traditional means of environmental regulation, which include prohibitions, standard-setting and permit requirements, as well as the necessary administrative and enforcement mechanisms, are thus a necessary part of sustainable development. Regulation also is necessary to ensure

---

[361] *See, e.g.*, Rosenbaum, *supra* note 356, at 10,459-61 (stating that feedback, flexibility, and continued commitment are essential to drafting and implementing laws for sustainable development). Countries should thus gather sufficient information about natural systems and the effect of particular policies to determine the effectiveness of particular approaches.

[362] *See* Agenda 21, *supra* note 1, ¶ 8.5(f). The Rio Declaration ignores planning altogether, although it affirms the need for regulatory and even economic instruments. *See* Rio Declaration, *supra* note 3, princs. 10, 11, 13, 15-17. By contrast, the Stockholm Declaration refers to planning and management in four separate principles but does not refer to other legal or policy tools. *See* Stockholm Declaration, *in Human Environment*, *supra* note 82, princs. 13-15, 17.

[363] *See* John Dernbach and the Widener University Law School Seminar on Law and Sustainability, *supra* note 7, at 10,507-08 (explaining that the President's Council for Sustainable Development in the United States has no legal authority to implement its recommendations, and that few recommendations are being implemented); Scherr & Barnizer, *supra* note 347, at 34 (finding similar situations in most other countries).

[364] *See* NATIONAL COUNCILS FOR SUSTAINABLE DEVELOPMENT, *supra* note 207, at 8-9.

that monitoring is conducted and to establish a level playing field for economic competitors.[365] The protection of natural resources and ecological systems is not likely to be effective without regulation.

Agenda 21 suggests a shift in emphasis from regulatory tools toward economic, information and other tools, however, because of some important limitations in the effectiveness of regulation. These limitations are likely to exist even if taxes, subsidies and other governmental actions that send contrary messages are removed or modified. When they restrict the undesirable environmental and human health effects of particular activities, regulatory tools have the incidental effect of steering the economy in less harmful directions that are not so restricted. Regulatory tools, however, tend to work better at controlling bad activities than encouraging good ones; they do not necessarily or fully encourage individuals or corporations to do their best work to further public goals. Many current laws, for example, require the adoption of regulations imposing limits on the release of pollutants based on the capabilities of the best available control technology in existence at the time. While they tend to force facilities to upgrade their pollution controls to meet the new limits, such regulations do not provide any incentive for the continual improvement of technology or further reductions in the release of pollutants. While performing "beyond compliance" reduces the likelihood of violations and may improve economic performance, the regulatory system itself contains few other incentives to go beyond the required level of control. Regulation by itself is thus vulnerable to two criticisms: it is insufficiently protective of human health and the environment, and it is unnecessarily expensive.[366]

These limits of regulation do not, however, constitute an implied critique of the purposes of environmental law. Rather, as Agenda 21 recognizes, environmental protection requires the entire set of available tools. Thus, laws that complement and reinforce regulation are likely to result in more protective and economically efficient outcomes.

3. Information

The development and dissemination of information, especially public information, must play a central role in sustainable development. Agenda 21 urges the use of several different kinds of public information to move decision-making by governmental and nongovernmental actors toward sustainable development.

---

[365] *See* Agenda 21, *supra* note 1, ¶¶ 8.15-8.17, 8.21. Economic tools are not particularly effective for those purposes.

[366] *See, e.g.*, John C. Dernbach, *The Unfocused Regulation of Toxic and Hazardous Pollutants*, 21 HARV. ENVTL. L. REV. 1 (1997) (analyzing environmental and economic effects of inconsistent choice of pollutants for regulation under five U.S. statutes).

To begin with, Agenda 21 suggests the use of sustainable development indicators in national decision-making.[367] Sustainable development indicators are a necessary counterpart to goals because they provide a means of measuring progress toward attainment of goals. Indicators are numerical markers of trends or developments in a particular field; examples include the unemployment rate and crime statistics. A goal without corresponding indicators of progress toward reaching it is an empty gesture, but an indicator without a corresponding goal likely will be ignored.

In a system that is guided by goals, the use of indicators is a powerful and necessary means of ensuring that the goals are actually met and that progress is maintained.[368] Statistical indicators of progress toward goals would measure achievement (or lack of it) and make those results transparent to the public and to other countries. The existence of indicators also would provide an incentive for the achievement of goals. When goals and indicators reflect a high degree of consensus about the ends being sought, in fact, voluntary efforts to achieve goals may even make laws unnecessary in some cases.

The use of indicators for ecosystem services also would assist in the sustainable management of natural systems.[369] Watersheds, for example, can help store groundwater, limit flooding, provide habitat and provide recreational opportunities. Lack of accessible information about the value of nature's services is a major reason watersheds and other parts of the environment are not well protected. Indeed, a society that knew the ways in which it was benefited by ecosystem functions would likely want to protect most, if not all, of them.[370]

Another important step toward integrating governmental decision-making is the incorporation of environmental and social factors into national economic accounts. Perhaps the most important indicator of a nation's success is its gross domestic product. A nation's GDP is its conventional national economic account, measuring the value of all goods and services that are bought or sold. Changes in a country's GDP profoundly affect decision-making by the country's government as well as many others, including those in the private sector. Agenda

---

[367] *See* Agenda 21, *supra* note 1, ¶ 8.44(a); U.N. COMM'N ON SUSTAINABLE DEV., INDICATORS OF SUSTAINABLE DEVELOPMENT FRAMEWORK AND METHODOLOGIES, U.N. Sales No. E.96.II.A.16 (1996) (recommending and explaining specific indicators to measure national progress in implementing Agenda 21).

[368] Much of this kind of information is already published, though generally it is unrelated to national goals. The United Nations Development Programme, for example, publishes a human development report containing about 20 categories of numerical information relating to human development for each country, including health, education, energy consumption, military expenditures, environment and pollution, and gross domestic product. *See, e.g.*, HUMAN DEVELOPMENT REPORT 1996, *supra* note 47, at 124-228.

[369] *See* Salzman, *supra* note 292, at 899-900 (advancing innovative ideas of what future research on the ecosystem will reveal).

[370] *See* COSTANZA ET AL., *supra* note 166, at 95.

21 proposes that countries establish satellite systems of environmental and social accounting to supplement GDP[371] because, as economists generally recognize, GDP does not accurately reflect a nation's overall well-being, as measured in social, environmental and economic terms. Because GDP only considers goods and services that have market value, it does not include parental childcare, for example, or the various services that nature provides.[372] In fact, there is evidence that human well-being in developed countries has decreased even though their GDP has grown. Herman Daly and Clifford Cobb have produced a well-documented Index of Sustainable Economic Welfare for the United States and other developed countries. The index correlates closely with GDP until the mid-1970s, but has declined since that time.[373] Similarly, the Fordham Institute for Innovation in Social Policy has produced an index of social health for the U.S. that is comparable to GDP until the early to mid-1970s but has declined relative to GDP since then.[374]

A separate set of satellite accounts for environmental and social costs, coupled with GDP, would provide a more accurate measure of a nation's well-being. The Daly and Cobb Index of Sustainable Economic Welfare would accomplish the same result by replacing GDP entirely. It is difficult to underestimate the potential influence of a modified GDP accounting system in moving countries toward sustainable development. Among other things, such a system would integrate social, economic and environmental information in a single indicator; help redirect capital investment toward sustainable development; and encourage parallel changes in corporate accounting. Because it would identify environmental and social declines that correspond to GDP increases, a modified GDP accounting system also would identify the extent of externalities that need to be remedied under the polluter-pays principle.

---

[371] *See* Agenda 21, *supra* note 1, ¶ 8.42. To set up such accounts, governments will also need to implement data collection systems to obtain required information. *See id.* ¶ 8.49. Agenda 21 also suggests the sharing of information on technical and methodological issues relating to the use of satellite accounts. *See id.* ¶¶ 8.46, 8.50.

[372] *See id.* ¶ 8.45. Some countries also have a much higher level of social or human development than their national income would suggest, and some have a much lower level of such development than their national incomes. *See* HUMAN DEVELOPMENT REPORT 1996, *supra* note 47, at 4-5 (describing the types of growth that hinder human development). *See generally* TAKING NATURE INTO ACCOUNT: TOWARD A SUSTAINABLE NATIONAL INCOME (Wouter van Dieren ed., 1995) (explaining how conventional GDP accounting fosters unsustainable development, and suggesting alternatives).

[373] *See* HERMAN E. DALY & JOHN B. COBB, JR., FOR THE COMMON GOOD 443-507 (2d ed. 1994).

[374] *See* MARC L. MIRINGOFF, FORDHAM INSTITUTE FOR INNOVATION IN SOCIAL POLICY, 1997 INDEX OF SOCIAL HEALTH: MONITORING THE SOCIAL WELL-BEING OF THE NATION 11-12 (1997) (stating that GDP has grown 99% since 1970 but social health as measured by 16 social problems has declined by 45%).

A major obstacle to the adoption of either satellite accounts or a system that replaces GDP is the absence of a commonly-agreed-upon methodology for social and environmental accounting.[375] Another obstacle, in good or bad economic times, is uncertainty about potential impacts. Economic globalization suggests the possibility that GDP modifications should not be made unilaterally by countries but rather should occur simultaneously in many countries to avoid distortions in capital flows.

Another approach is to increase consumer information. Consumers can help move nations in a more sustainable direction if they are given more and better information about the environmental and social costs of goods and services. The experience of several European countries with government-mandated eco-labeling suggests that requiring information to be placed on the product influences purchasing choices. By providing consumers with the opportunity to make informed choices between products based on the environment, legal requirements for such information can help steer production in a more sustainable direction.[376] Agenda 21 also encourages the adoption of laws requiring the annual disclosure of information about toxic chemicals released from industrial facilities.[377] Such laws would be patterned after an Amreican statute, the Emergency Planning and Community Right-to-Know Act,[378] under which comparable disclosure requirements have led to reductions in the releases of those chemicals.[379]

Such information can not be used, of course, unless it is first gathered or created. Because much of this information is not now systematically collected or organized, a conscientious national effort to move in a more sustainable direction would require a major institutional effort to develop the necessary data. Governments need not develop all of the necessary information by themselves. They could directly require others to do so, as the Emergency Planning and Community Right-to-Know Act does. Governments could also indirectly encourage private parties to develop that information by, for example, adopting laws that encourage scientific research on ecosystem services.[380]

---

[375] *See* COSTANZA ET AL., *supra* note 166, at 120-40 (surveying environmental accounting alternatives).

[376] Market efficiency in a knowledge-based economy, in fact, requires social equity. *See* Brad Allenby, *Clueless*, ENVTL. F., Sept.-Oct. 1997, at 35, 36.

[377] *See* Agenda 21, *supra* note 1, ¶ 19.50(c).

[378] *See* 42 U.S.C. §§ 11001-11050 (1996).

[379] *See* OFFICE OF POLLUTION PRESERVATION AND TOXICS, ENVIRONMENTAL PROTECTION AGENCY, 1994 TOXICS RELEASE INVENTORY PUBLIC DATA RELEASE 169 (1995) (stating that total releases for 1994 were 44.1% less than in 1988, the year when reporting was first required).

[380] *See* Salzman, *supra* note 292, at 898-99 (discussing the potential benefits of a union between environmental law and ecosystem services).

4. Economic Instruments

Although Agenda 21 recognizes the importance of regulation, it emphasizes that prices, markets and governmental fiscal and economic policies must play an expanded role.[381] Governments are encouraged to strive for a system in which environmental and social costs are fully reflected in prices.[382]

Economic tools, including fees, taxes, trading systems for pollutants, and the like, are widely understood to be extremely effective in changing consumer behavior.[383] Economic tools oblige producers or users to incur the environmental and social costs of their activities through the price they pay, thus directly affecting the financial accounting inherent in private and much governmental decision-making. Economic instruments can thus facilitate both integrated decision-making and the polluter-pays principle.[384] Properly designed, economic instruments are also less expensive than conventional regulatory tools to private entities. Because they are less expensive, they make possible the achievement of more ambitious goals than would otherwise be attainable with conventional tools. By reducing economic distortions, economic tools also can improve economic efficiency in environmental protection.[385] In addition, economic or market-based tools can be easier to implement and can raise revenues through taxes or fees.[386] These benefits of economic tools also can make environmental protection more attractive to developing countries.

Economic tools are particularly useful as a supplement to regulatory and other tools.[387] Because sustainable development would change the dynamic and direction of our economic life, industrial and other economic activity must become an agent of sustainable development.[388] Economic tools can harness the powerful and creative energy of the market system on behalf of social and environmental goals within a regulatory structure. By charging fees for pollutant releases, for example, governments provide an incentive to keep im-

---

[381] *See* Agenda 21, *supra* note 1, ¶ 8.27; *see* FUTRELL, *supra* note 170, at 13 ("The transition to sustainable development law will require us to move beyond a reliance on subsidy and command-and-control regulation to use all legal tools optimally.").

[382] *See* Agenda 21, *supra* note 1, ¶¶ 8.31-8.32; *see also* STEPHAN SCHMIDHEINY, CHANGING COURSE: A GLOBAL BUSINESS PERSPECTIVE ON DEVELOPMENT AND THE ENVIRONMENT (1992) (strongly endorsing economic instruments such as charges and subsidies).

[383] *See* 1995 CSD Report, *supra* note 112, at 9; *see also* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, MANAGING THE ENVIRONMENT: THE ROLE OF ECONOMIC INSTRUMENTS (1994). Subsidies and the removal of subsidies are other economic tools.

[384] *See* Rio Declaration, *supra* note 3, princ. 16.

[385] *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 338, at 12.

[386] *See* FIVE YEARS AFTER RIO, *supra* note 237, at 10.

[387] *See, e.g.*, Potier, *supra* note 341, at 17.

[388] *See* DAVID WALLACE, SUSTAINABLE INDUSTRIALIZATION 58 (1996).

proving pollution control technology and reducing pollutant releases.[389] Economic tools thus overcome an important limitation in traditional regulation.

Taxes are a particularly important tool. While they could be used to raise new revenue, taxes also could be revenue-neutral, shifting taxation toward materials, energy and pollution, and away from labor and investment. A task force in the United States concluded that "no other single policy step could so effectively and at so low a cost move the country toward more efficient—and eventually sustainable—resource use."[390] Denmark, Finland, the Netherlands, and Sweden have begun such a shift in taxation.[391] In addition to reducing pollutants, this approach also might have a small but positive effect on employment, particularly if the social security tax for low-wage workers were reduced.[392]

The use of taxes to foster sustainable development would require the resolution of several important questions. One of the most important is the tax rate. According to environmental economic theory, the tax rate for emissions should be set at a level where the marginal economic cost of reducing emissions equals the social and environmental costs of these emissions. Because calculating social and environmental costs requires a great deal of information, however, many European countries simply calibrate the tax level to achieve a specific goal for reduction in emissions.[393] Goal-based tax rates also provide a means of incorporating the precautionary approach into decision-making about social and environmental costs. European experience suggests that the gradual introduction of new taxes, coupled with an indication of the ultimate rate at which a particular thing eventually will be taxed, would reduce transition costs and assist planning for alternatives.[394] Of course, new fees or taxes also would have to be designed to avoid imposing greater burdens on the poor.[395]

---

[389] *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 338, at 7.

[390] PRESIDENT'S COUNCIL ON SUSTAINABLE DEVELOPMENT, POPULATION AND CONSUMPTION TASK FORCE REPORT 40 (1996); *see also* ROBERT REPETTO ET AL., GREEN FEES: HOW A TAX SHIFT CAN WORK FOR THE ENVIRONMENT AND THE ECONOMY (1992); TAXATION FOR ENVIRONMENTAL PROTECTION: A MULTINATIONAL LEGAL STUDY (Sanford E. Gaines & Richard A. Westin eds., 1991).

[391] *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 338, at 23-26; *see also* EUROPEAN ENVIRONMENT AGENCY, ENVIRONMENTAL TAXES: IMPLEMENTATION AND ENVIRONMENTAL EFFECTIVENESS (1996) (providing an overview of environmental tax issues).

[392] *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 338, at 34-36.

[393] *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, IMPLEMENTATION STRATEGIES FOR ENVIRONMENTAL TAXES 20-23 (1996).

[394] *See id.* at 24-26.

[395] *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 338, at 37-44.

One particularly ambitious proposal gives a flavor of what such changes could mean. It involves an annual 5% increase in the tax for fossil fuels and certain other natural resources over a 30- to 40-year period.[396] Among other things, such a tax likely would reduce the consumption of energy and certain materials. Because of the gradual increase over an extended period, it also would ease the transition to more efficient use of materials and energy, as well as encourage development of alternatives to fossil fuels.

Implicit in such proposals is a broader problem: the need to attach an economic price to the disturbance or destruction of natural systems, particularly those that provide services to humans. Old-growth and tropical forests are logged or burned, for example, because the sale of timber or the conversion of forest land to agriculture appears to provide a better short-term economic return than other uses of those forests. The rainforest in the Amazon River basin, however, yields rubber, fruit, hardwoods and other products that could be harvested on a sustainable basis, and that also could provide a continuing economic base for local people. Over the long run, in fact, the economic return from sustainable use of the forest is likely to be much greater.[397] Legal and policy instruments should recognize, and create economic incentives for the protection of, these and other natural services.

Caution about economic instruments is appropriate, however. Agenda 21 recommends a broader and more penetrating use of economic instruments than has previously been applied on a widespread basis.[398] It thus suggests that governments share information with each other about the effectiveness of various economic instruments that already are being employed.[399] Agenda 21 also indicates that they should gain better understanding of pricing policies, environmental taxation and other aspects of sustainable development economics.[400]

5. Property

Property law in many countries has tended to encourage development of land without much consideration of the environment.[401]

---

[396] *See* VON WEIZSÄCKER & JESINGHAUS, *supra* note 264, at 9. Obviously, a host of technical and other objections would need to be overcome. *See id.* at 57-70.

[397] *See, e.g.*, JUAN DE ONIS, THE GREEN CATHEDRAL: SUSTAINABLE DEVELOPMENT OF AMAZONIA 22-36, 203-18 (1992).

[398] *See* Lee, *supra* note 360, at 30-31.

[399] *See* Agenda 21, *supra* note 1, ¶ 8.35; *see also Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 86.

[400] *See* Agenda 21, *supra* note 1, ¶¶ 8.36-8.38.

[401] *See, e.g.*, Joseph L. Sax, *Property Rights and the Economy of Nature: Understanding* Lucas v. South Carolina Coastal Council, 45 STAN. L. REV. 1433, 1442-46 (1993) (comparing

Sustainable development thus requires changes in many property laws as well as other laws that affect the use of property. The basic challenge is to ensure that property owners are encouraged by law to use their property in a sustainable manner. This type of encouragement would be consistent with broad public participation in sustainable development because property owners, as property owners, would be advancing the work of sustainable development. It also would be consistent with local-level decision-making because property owners usually are situated close to the land they own. Finally, property-owner-based decision-making may yield better results than governmental decision-making because property owners understand conditions on their land better than the government.

Sustainable uses by landowners are most likely to occur, as Agenda 21 recognizes, if the laws relating directly to real property ownership oblige owners to integrate environmental, social and economic considerations into their day-to-day decision-making.[402] A basic fear of property owners is that government action to protect the environment will reduce property value or the uses to which property can be put. Of course, such laws would have to steer clear of constitutional prohibitions against governmental takings of property without compensation.[403] A variety of constitutional mechanisms are available, including disclosure requirements and tradeable use rights, although such mechanisms would need to be tailored to sustainable development. In addition, property tax laws could be written or modified to provide reduced or no property tax for lands that are managed for biodiversity or other sustainable uses. Similarly, a recently adopted Costa Rican law seeks to maintain important ecological services provided by private property left in natural cover by compensating landowners for keeping it in that condition.[404] Such changes

---

property law principles in the current economy, which views nature as a thing to be transformed, and in a hypothetical future economy based on an ecological perspective of land).

[402] *See* Agenda 21, *supra* note 1, ¶¶ 10.6, 10.7. Agenda 21 also recommends property law changes in a variety of specific contexts. *See id.* ¶ 12.28(c) (pastoral and nomadic groups in rural areas); *id.* ¶ 14.9(c) (agricultural land); *id.* ¶¶ 16.7(a), 16.37 (intellectual property in biotechnology); *id.* ¶ 18.76(a)(iv) (community ownership of rural water supplies and sanitation facilities); *id.* ¶ 26.4(b) (indigenous intellectual and cultural property). Agenda 21 also recommends that developed countries find a way to share environmentally sound technology with developing countries without compromising intellectual property rights in that technology. *See id.* ¶¶ 34.10, 34.14(b), 34.18(e)(iii); *see also* LEE, *supra* note 336, at 193 (arguing that property law changes are essential for sustainable development). *See generally* PROPERTY RIGHTS AND THE ENVIRONMENT: SOCIAL AND ECOLOGICAL ISSUES (Susan Hanna and Mohan Munasinghe eds., 1995) (discussing the interplay of property rights and conservation); PROPERTY RIGHTS IN A SOCIAL AND ECOLOGICAL CONTEXT: CASE STUDIES AND DESIGN APPLICATIONS (Susan Hanna and Mohan Munasinghe eds., 1995) (exploring the relationship between property rights and environmental sustainability in a variety of nations and contexts).

[403] *See, e.g.*, U.S. CONST. amend. V (providing that the federal government may not take property for public use without just compensation).

[404] *See* Janet M. Abramovitz, *Valuing Nature's Services*, *in* STATE OF THE WORLD 1997, *supra* note 70, at 113.

make, or can make, sustainable uses of land more economically attractive without directly affecting property rights.

Another approach is to change property rights in ways that increase property values. Legislation or legal agreements might create economic value in natural features that are not now recognized to have economic value, such as the ability of forests to absorb carbon dioxide from the atmosphere, and allow landowners to benefit from the protection of those features. Many in developing countries advocate the creation of community or individual property rights in traditional knowledge or skills concerning the use of native plant and animal species, or even in the plants and animals themselves, particularly for their medicinal value.[405] Because they would encourage property owners to engage in sustainable activities based on self-interest, such approaches could have more effective and widespread results than governmental regulation.

6. Education

Agenda 21 recognizes a "lack of awareness of the interrelated nature of all human activities and the environment."[406] It thus seeks to foster "a global education effort to strengthen attitudes, values and actions which are compatible with sustainable development."[407] This public awareness effort is important not only to build a greater sense of personal responsibility but also to conduct and enhance the kind of public debate about sustainable development that is necessary in a democratic society.[408] Agenda 21 thus includes a commitment by national governments to promote public awareness of the importance of integrating environment and development issues.[409] Part of governmental leadership, in short, is educating citizens about the importance of problems and leading a public debate on what to do about them.[410]

Agenda 21 also recommends that formal education for children includes a sustainable development curriculum. It proposes that countries "update or prepare strategies aimed at integrating environ-

---

[405] *See* Kenton R. Miller, *Deforestation and Species Loss, in* PRESERVING THE GLOBAL ENVIRONMENT: THE CHALLENGE OF SHARED LEADERSHIP, *supra* note 10, at 101-07 (recommending changes to property laws to foster sustainable use of forests).

[406] Agenda 21, *supra* note 1, ¶ 36.8.

[407] *Id.* ¶¶ 36.8, 36.9.

[408] *See id.* ¶ 36.10; *see also id.* ¶ 23.2 ("One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making.").

[409] *See id.* ¶¶ 8.11, 36.10.

[410] *See* MARC K. LANDY ET AL., THE ENVIRONMENTAL PROTECTION AGENCY: ASKING THE WRONG QUESTIONS 7 (expanded ed. 1994) ("Government has the obligation to provide the civic education that strengthens the capacity of citizens for successful self-government."); *see also* John Dernbach and the Widener University Law School Seminar on Law and Sustainability, *supra* note 7, at 10,509-11 (stating that in first five years after UNCED, the U.S. failed to educate the general public about the need for sustainable development or its implications).

ment and development as a cross-cutting issue into education at all levels."[411] Such education would focus on "environmental and ethical awareness, values and attitudes, [and] skills and behavior."[412] It would, in short, "[e]nsure that the interconnections between the environment, economy and social structures become an integral part of formal education."[413] Because seeking and maintaining sustainability will be a permanent feature of the political landscape, it is appropriate to ensure that tomorrow's voters and decision-makers are capable of integrated decision-making. Many adults simply do not recognize the relationships among social, economic, and environmental issues, and do not know how to think about those relationships. They may understand environmental and ecological concepts, but they separate their thinking about those concepts from their economic or social thinking. When people are habituated to approaching problems in that way, change becomes difficult. Education on sustainable development would give young people an important set of habits and tools for decision-making in the world they will inherit.

C. Adaptation to National Needs and Circumstances

The countries that carry out Agenda 21 have "different situations, capacities and priorities."[414] They also have varying cultures, histories, economic systems, and natural environments, and thus varying types of natural, human, and human-made capital that they should protect and enhance. Agenda 21 asks states to use the framework to realize sustainable development in their own circumstances—something that requires a good deal more than simply carrying out an international agreement.

The literature on implementation of domestic laws recognizes two contrasting types of implementation and sheds light on the process required to make sustainable development occur. In general, implementation involves a distinction between domestic decision-makers, particularly legislatures, that adopt laws, and the various administrative officials who carry out or implement them.[415] Programmed implementation involves a strict separation of the policy-making and implementation roles. It occurs for laws whose administration re-

---

[411] Agenda 21, *supra* note 1, ¶ 36.5(b).

[412] *Id.* ¶ 36.3; *see also Programme for the Further Implementation of Agenda 21*, *supra* note 5, ¶ 105 ("Even in countries with strong education systems, there is a need to reorient education, awareness and training to increase widespread public understanding, critical analysis and support for sustainable development.").

[413] PRESIDENT'S COUNCIL ON SUSTAINABLE DEVELOPMENT, EDUCATION FOR SUSTAINABILITY: AN AGENDA FOR ACTION 12 (1996).

[414] Agenda 21, *supra* note 1, ¶ 1.6

[415] *See* DANIEL A. MAZMANIAN & PAUL A. SABATIER, IMPLEMENTATION AND PUBLIC POLICY 8 (1983).

quires relatively little discretion.[416] Programmed implementation requires program designers to be extremely knowledgeable about the problem being addressed, how the law will affect the problem, and how those subject to the law will behave.[417]

Adaptive implementation, by contrast, involves great discretion on the part of those implementing a program, and thus substantial overlap between the policy-making and implementation functions.[418] Adaptive implementation requires those implementing a program to actually develop or refine the norms and procedures by which the program is operated. Adaptive implementation is often used when there is little experience addressing the problem, when the approach being used is novel, or when there are substantial uncertainties about how those covered by the law will respond. Adaptive implementation requires those implementing the law to be supportive of its goals and to learn from their experience, and thus to modify either the law or their implementation of it from time to time to improve its effectiveness.[419] Adaptive implementation thus combines two concepts: adaptation of a general program to the circumstances of a particular country and adaptive management.

In practice, programmed and adaptive implementation are opposite ends of a spectrum, and most implementing-agency practice falls somewhere between these ends. But the contrasting types highlight an important issue for sustainable development: the extent to which each country determines on its own what sustainable development means. The conceptual framework for sustainable development obviously suggests limits on what a country can do in the name of sustainable development. On the other hand, the great breadth of sustainable development and the variety of situations in which its concepts can be applied suggest the importance of an adaptive approach.

Admittedly, many countries have taken preliminary steps toward sustainable development, particularly with their environmental laws and natural resources conservation laws. Subsequent steps toward sustainable development, however, likely will require those designing, implementing and complying with new laws to act and think in

---

[416] *See* Paul Berman, *Thinking About Programmed and Adaptive Implementation: Matching Strategies to Situations*, *in* WHY POLICIES SUCCEED OR FAIL 205 (Helen M. Ingram and Dean E. Mann eds., 1980).

[417] Using experience with pre-existing state laws, for example, drafters of federal Surface Mining Control and Reclamation Act limited field discretion in regulation of surface mining. *See* John C. Dernbach, *Implementation of the Surface Mining Control and Reclamation Act in Pennsylvania: A Decade Later*, *in* MINING THE EARTH: COOPERATIVE FEDERALISM AND IMPLEMENTATION OF THE SURFACE MINING ACT 149 (Uday Desai ed., 1993).

[418] *See* Berman, *supra* note 416.

[419] *See* LEE, *supra* note 336, at 111-12; *see also* Michael Kirst and Richard Jung, *The Utility of a Longitudinal Approach in Assessing Implementation: A Thirteen-Year View of Title I, ESEA*, *in* STUDYING IMPLEMENTATION: METHODOLOGICAL AND ADMINISTRATIVE ISSUES 119 (Walter Williams et al. eds., 1982).

new and perhaps unprecedented ways. As they do, they will be adaptively implementing sustainable development concepts.

The relatively high level of generality of Agenda 21 is consistent with adaptive implementation.[420] Many goals and actions in Agenda 21 contain no dates on which they should be met or taken and are stated in such general terms that it is difficult to know how much effort or achievement would be sufficient. Agenda 21, for example, calls on countries to reduce the generation of hazardous wastes to the extent feasible[421] but does not say when this should be done, who determines what is feasible or how much reduction is expected. Because Agenda 21 was written for all countries, however, this generality can be understood as part of its strength; it suggests general directions and gives countries the opportunity to determine more precisely how to carry them out without appearing to be inconsistent with it.[422] Their expression of the goal or action could be more precise than Agenda 21, or they could set a date for the accomplishment of the goal where no date is set in Agenda 21. Countries also will need to adopt laws that can actually be implemented, that are based on their particular legal system and institutions, that anticipate behavioral changes induced by these laws, that are modified in light of experience to be more effective, and that clearly communicate behavioral norms to their citizens.[423] The complexity of integrating economic, social, and environmental analysis of particular problems makes it difficult to know how persons covered by sustainable development laws will respond; particular approaches might even create new problems that require correction. The continuous learning inherent in adaptive implementation means that sustainable development norms will likely become even more particularized to the circumstances of individual countries over time.

Finally, adaptive implementation is necessary because, while it provides a set of norms to guide national law and policy, the framework is in some ways incomplete. Much of the framework's specific meaning will be determined at the national level because decisionmakers will need to determine, among other things, the particular services that natural systems provide; the precise manner in which they will integrate consideration of environmental, social and eco-

---

[420] The general principles embodied in the Rio Declaration also call for fleshing out in particular situations. Indeed, a weakness of such principles in international law is that their generality substantially dilutes their potential effectiveness. *See* ULTIRCH BEYERLIN & THILO MARUHN, LAW-MAKING AND LAW-ENFORCEMENT IN INTERNATIONAL ENVIRONMENTAL LAW AFTER THE 1992 RIO CONFERENCE 20-24 (1997).

[421] *See* Agenda 21, *supra* note 1, ¶ 20.11(a).

[422] This generality can also be understood, of course, as a weakness. By agreeing to Agenda 21, however, nations made a political agreement to carry out its provisions in good faith. *See infra* notes 428-31 and accompanying text. That means, among other things, that they should find ways to give those provisions meaning, not to evade them.

[423] *See* SEIDMAN & SEIDMAN, *supra* note 220, at 43-44, 351-53.

nomic factors; and how to give equivalent emphasis to economic, environmental and social goals on an intergenerational basis.[424] As a consequence, national actions to implement Agenda 21 will shape understanding of what sustainable development means and could mean.

IV. LIMITATIONS AND OBJECTIONS

Two major concerns remain to be addressed, and they are related. One is that sustainable development lacks sufficient grounding in international law to be taken seriously. The other is that it represents such a major challenge to existing power structures that governments will not allow it to occur.

A. Legal Limitations

For all its conceptual strengths, the sustainable development framework has some significant weaknesses. It is based primarily on nonbinding legal instruments. The environmental treaties as a whole contain significant gaps and are based on incompletely articulated norms. Furthermore, the framework does not reconcile trade and the environment.

1. Treaties and Soft Law

The framework described in this Article is based primarily on nonbinding agreements. Such agreements are not trivial, but agreements based on treaties are binding in international law[425] and are thus taken more seriously. As a result, the legal force of agreements such as Agenda 21 is not likely to play a major role in any global effort to achieve sustainable development. At best, Agenda 21 and related texts put the conceptual framework into play, making it part of a continuing dialogue in international discussions. Through these discussions, sustainable development is beginning to be incorporated into legal norms. For sustainable development to occur, however, nations must see the framework as sensible or attractive in its own right, wholly apart from its status in international law.

The agreements creating the World Bank and the International Monetary Fund, the two major human rights covenants, and the Framework Convention on Climate Change are all treaties. Treaties are agreements that countries have negotiated with the expectation of being legally bound and that are later ratified by their governments. Countries that have ratified a treaty are considered parties to the treaty

---

[424] *See* Maggio & Lynch, *supra* note 52, at 99.

[425] *See* Statute of the International Court of Justice, June 26, 1945, arts. 36(1), 36(2)(a), 59 Stat. 1031.

and are bound to follow it in good faith.[426] The parties to a treaty also have the ability to negotiate legally binding amendments or protocols to that treaty. The conceptual framework for sustainable development, however, exists primarily in the Rio Declaration, Agenda 21, and the Programme for the Further Implementation of Agenda 21. While various treaties contain elements of the sustainable development framework, only Agenda 21 and related instruments make any concerted effort to integrate environment and development. Yet these instruments are simply declarations or plans from international conferences or the General Assembly.[427] Parties to such agreements are not legally bound to follow them. They were negotiated and approved by virtually all nations, but they are not treaties, were not intended to be legally binding, and do not require ratification. Because Agenda 21 is not legally binding, the CSD reviews are also "soft law" processes. They generate recommendations or documents, such as the Programme for the Further Implementation of Agenda 21, that also are not legally binding. It is thus relatively easy for Agenda 21 and the CSD process to be obscured by the negotiation and implementation of treaties and protocols.

These instruments and the CSD process are more easily justified on political than on legal grounds. Still, they are unlikely, by themselves, to lead to substantial progress in achieving sustainable development. Soft law texts give considerable discretion to nations[428] but come with the "expectation that the states accepting these instruments will take their content seriously and will give them some measure of respect."[429] The "legal" character of soft law norms thus derives from both international consent to them and the expectation that nations will make a good faith effort to keep the commitments these norms express.[430] A country's agreement to a soft law instrument also relin-

---

[426] *See* Vienna Convention on the Law of Treaties, May 23, 1969, art. 26, U.N. Doc. A/CONF.39/27 at 289 (1969), *reprinted in* 8 INT'L LEGAL MATERIALS 679 (1969). The other major source of international law is "international custom, as evidence of a general practice accepted as law." Statute of the International Court of Justice, *supra* note 425, art. 38(1)(b). Custom does not appear to be a significant means for the implementation of sustainable development norms, however. *See* Daniel Bodansky, *Customary (And Not So Customary) International Environmental Law*, 3 IND. J. GLOBAL LEG. STUD. 105 (1995) (arguing that treaties are more effective than custom).

[427] The General Assembly is authorized only to "make recommendations" to member nations. *See* U.N. CHARTER, art. 10.

[428] *See* Geoffrey Palmer, *New Ways to Make International Environmental Law*, 86 AM. J. INT'L L. 259, 269 (1992).

[429] Joseph Gold, *Strengthening the Soft International Law of Exchange Arrangements*, 77 AM. J. INT'L L. 443, 443 (1983) (referring to "soft" law for exchange arrangements and exchange rates in the international monetary system). Gold's formulation is equally applicable to "soft" law for sustainable development. Discretion without respect for the instruments makes it pointless to negotiate them in the first place.

[430] *See* OSCAR SCHACTER, INTERNATIONAL LAW IN THEORY AND PRACTICE 100-01 (1991); *see also* Jonathan Carlson, *Hunger, Agricultural Trade Liberalization, and Soft International*

quishes any right the country may have to say that its actions concerning the matter are only of domestic concern.[431] Agenda 21 and other instruments are based on the negotiation and consent of national governments and thus represent political commitments to sustainable development. The nations of the world did agree to move toward sustainable development within that framework and confirmed that agreement at the five-year review in 1997. Indeed, that political commitment has brought international attention to the concept.

Agreement to soft law instruments such as Agenda 21 has several consequences. States cannot assert in international forums that their adherence to Agenda 21 is merely an internal matter. By agreeing to Agenda 21, they have acknowledged that the issues it addresses are a legitimate subject of international concern. Indeed, by providing information to CSD concerning actions they have taken under Agenda 21, nations confirm that conclusion.[432] Nor does it appear consistent with a good-faith commitment to ignore the domestic implications of Agenda 21 and other instruments simply because of their international origin. However, because treaties are supported by political as well as legal commitments, it is reasonable to conclude that most governments will give greater political attention to treaties. Governments may acknowledge that their implementation of Agenda 21 is of interest to the international community and recognize that they can not ignore Agenda 21, but that does not mean they have the duty to take meaningful action.

The revised CSD process for review of national progress toward sustainable development could give Agenda 21 greater impetus, but its soft law status likely limits its effectiveness. As Professor Harold Koh has pointed out, a nation's understanding of its own self-interest in implementing international agreements is profoundly affected by repeated international and domestic interactions involving the development and application of international norms.[433] Thus, interaction among states produces a particular norm that is then internalized by each state to some degree. Adherence to that norm, or more complete internalization of the norm, occurs in a variety of contexts, as states are reminded of that norm by other states, intergovernmental organizations, nongovernmental organizations and their own citizens. Be-

---

Law: Addressing the Legal Dimensions of a Political Problem, 70 IOWA L. REV. 1183, 1202 (1985).

[431] *See* SCHACTER, *supra* note 430 at 100-01. Soft law thus blends political and legal effects. *See* Tadeusz Gruchalla-Wesierski, *A Framework for Understanding "Soft Law,"* 30 MCGILL L. REV. 37, 43-45 (1984). As a practical matter, soft law and hard law are opposite ends of a spectrum; distinctions blur toward the middle. *See* Palmer, *supra* note 428, at 270.

[432] *See, e.g.*, United Nations, *Earth Summit +5 : Country Profile—United States* (visited July 13, 1997) <http://www.un.org/dpcsd/earthsummit/usa_cp.htm#10> (summarizing U.S. activities that are said to be consistent with Agenda 21).

[433] *See* Koh, *supra* note 13, at 2655.

cause a state's violation of international law creates friction and controversy, these interactions are likely to prompt compliance.[434]

Treaty implementation should be expected to create greater friction than soft law implementation because treaty norms are recognized as legal. For soft law to work as effectively, it must be accompanied by measures and processes that ensure some continuing respect for its norms.[435] That might occur, for example, when soft law norms increase the power of supportive domestic interests, solidify support for those norms by expected beneficiaries and encourage compliance with the norms by those who fear the international consequences of violation.[436]

Between 1992 and 1997, the relatively general CSD process did not ensure significant continued support for Agenda 21. The process did not help Agenda 21 attract powerful supporters, nor did it encourage compliance through fear of violation. In addition, sustainable development norms have not benefited people or organizations in obvious ways. It is little wonder that the "Rio-plus-five" review showed such modest results. By focusing on particular issues, the revised CSD process for 1998 to 2002 may provide clear benefits to particular interests and thus increase their support. Such productive outcomes would be more likely, in addition, if the process itself was more visible to the public. An increase in visibility would require more obvious and concerted participation by well-recognized nongovernmental organizations, such as national environmental groups, than has thus far occurred. Productive outcomes also would be more likely once individual countries or groups of countries could point to significant achievements in sustainable development that other countries would be pressed to emulate.

The limitations of soft law and the CSD process can be remedied in two basic ways. One is the use of sustainable development concepts at the national level. The other is the translation of sustainable development concepts into new treaties and protocols as well as other forms of hard international law. Each influences the other. New international legal requirements must be implemented domestically if they are to be effective, and domestic experience with sustainable development makes it more likely that nations will be willing to make

---

[434] *See* Harold Hongju Koh, *Transnational Legal Process*, 75 NEB. L. REV. 181, 203-05 (1996). "It is through this transnational legal process, this repeated cycle of interaction, interpretation, and internalization, that international law acquires its 'stickiness,' that nation-states acquire their identity, and that nations come to 'obey' international law out of perceived self-interest." Koh, *supra* note 13, at 2655. Professor Koh also suggests several factors that will likely influence domestic implementation of international norms. The number and kind of participants in domestic and international processes probably influences outcomes. It is also likely that the available institutional structures for transactions involving the development and application of norms influence domestic implementation. *See id.* at 2656.

[435] *See* Gold, *supra* note 429, at 462-79.

[436] *See* Carlson, *supra* note 430, at 1195-1200.

additional international commitments. The growing acceptability of sustainable development in an international context, on the other hand, should make it easier for nations to act accordingly. Soft law principles that are repeated in subsequent international agreements, for example, reflect an evolving common understanding among nations concerning their rights and responsibilities.[437] Without the negotiation and subsequent repetition of these norms, countries might easily believe that they inappropriately compromise national sovereignty.[438] This is especially important for sustainable development because it represents a new way of thinking about global problems.

Soft-law sustainable development norms already are being translated into hard international law. For example, the 1995 agreement on straddling and highly migratory fish stocks details the ways in which states should use the precautionary approach to protect fish stocks.[439] By identifying sustainable development as a relevant concept in a recent case, moreover, the International Court of Justice indicated that sustainable development may have legal stature independent of its inclusion in treaties.[440] In addition, some international organizations are incorporating sustainable development concepts into their practices even though the underlying treaty has not changed. The World Bank, for example, has begun to fund projects that foster

---

[437] *See* Pierre-Marie Depuy, *Soft Law and the International Law of the Environment*, 12 MICH. J. INT'L L. 420, 424-28 (1991).

[438] *See* Gruchalla-Wesierski, *supra* note 431, at 66; *see also* Susan H. Bragdon, *National Sovereignty and Global Environmental Responsibility: Can the Tension Be Reconciled for the Conservation of Biological Diversity?*, 33 HARV. INT'L L.J. 381 (1992).

[439] *See* Straddling and Highly Migratory Fish Stocks Agreement, *supra* note 228, art. 6.

[440] *See* Gabcíkovo-Nagymaros Project, *supra* note 169, ¶ 140. The case arose from a dispute between Slovakia and Hungary concerning a project for a system of dams and locks on the Danube River. The court decided that Hungary had breached a bilateral treaty by abandoning the project, even though it had done so because of the project's adverse environmental effects, but that Slovakia had also breached the treaty by the manner it had chosen to complete the project. *See id.* ¶¶ 27-88, 155(1). In addition, the court held that the parties must negotiate in good faith to resolve their differences, particularly differences over the project's environmental effects, using the principle of sustainable development "to reconcile economic development with protection of the environment." *Id.* ¶¶ 140, 155(2)(D). In a concurring opinion, Vice-President Weeramantry stated that sustainable development is a principle of international law "by reason not only of its inescapable logical necessity, but also by reason of its wide and general acceptance by the global community." *Id.* at 5 (separate opinion of Vice-President Weeramantry) (citing, at 3-5, numerous international agreements that refer to sustainable development). Weeramantry's opinion describes numerous historical antecedents for reconciling environment and development needs in the legal and religious systems of various cultures. *See id.* at 6-15. Like the court's opinion, Weeramantry's opinion describes sustainable development as the principle by which development and environmental protection are to be reconciled. *See id.* at 2; *see also* Nagendra Singh, *Sustainable Development as a Principle of International Law*, *in* INTERNATIONAL LAW AND DEVELOPMENT 1 (Paul de Waart et al. eds., 1987). The "general principles of law recognized by civilized nations" are part of international law. Statute of the International Court of Justice, *supra* note 425, art. 38(1)(c). Thus, Weeramantry would have decided that sustainable development is part of international law, even though the court did not.

sustainable development.[441] As these actions become more frequent, the legal and practical differences between sustainable development and the treaty implementation processes shrink.

With time and experience, sustainable development may even become the integrating framework for international law. Those who prepared and negotiated the Stockholm and Rio declarations were well aware that these declarations might provide the foundation for a future convention based on the principles they contain. These declarations thus have been analogized to the Universal Declaration of Human Rights, an enormously influential 1948 General Assembly resolution asserting the existence of certain human rights.[442] Although nonbinding, the Declaration led, almost two decades later, to the signing of the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights.[443] The International Union for the Conservation of Nature and Natural Resources (IUCN) has proposed a convention for sustainable development that is based on Agenda 21, the Rio and Stockholm declarations, and other agreements, as well as a number of well-established international law principles.[444] This convention would change the legal basis for sustainable development from soft law to hard international law, and provide an overall legal structure for integrating development and the environment. Most countries would find it imprudent to ratify such a convention, however, unless they first had significant experience with sustainable development within their own boundaries.

---

[441] *See generally* WORLD BANK, ADVANCING SUSTAINABLE DEVELOPMENT: THE WORLD BANK AND AGENDA 21 (1997); WORLD BANK, MAKING DEVELOPMENT SUSTAINABLE: THE WORLD BANK GROUP AND THE ENVIRONMENT FISCAL 1994 (1994). For an explanation of the World Bank's activities concerning the environment, including sustainable development, see generally Charles E. DiLeva, *International Environmental Law and Development*, 10 GEO. INT'L ENVTL. L. REV. 501 (1998). The Global Environment Facility (GEF), which is jointly managed by the World Bank, the U.N. Environment Programme and the U.N. Development Programme, separately funds projects for sustainable development in the areas of climate change, biological diversity, international waters and stratospheric ozone. Unlike many other World Bank activities related to the environment, however, GEF exists primarily to meet treaty requirements. *See id.* at 513-18.

[442] *Universal Declaration of Human Rights*, G.A. Res. 217A, U.N. GAOR, 3rd Sess., pt. 1, Resolutions, at 71, U.N. Doc. A/810 (1948).

[443] *See, e.g.*, Sohn, *supra* note 82, at 514-15.

[444] *See* Commission on Environmental Law of IUCN, International Covenant on Environment and Development (March 1995 draft) (on file with author); Nicholas A. Robinson, *IUCN's Proposed Covenant on Environment & Development*, 13 PACE ENVTL. L. REV. 133 (1995) (explaining background and purpose of covenant). The draft already is being used to draft various treaties. *See* Nicholas A. Robinson, *Attaining Systems for Sustainability Through Environmental Law*, 12 NAT. RESOURCES & ENV'T 86, 87 (1997); *see also* EXPERTS GROUP ON ENVTL. LAW OF THE WORLD COMM'N ON ENV'T & DEV., ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT: LEGAL PRINCIPLES AND RECOMMENDATIONS, U.N. Doc. WCED/86/23/Add.1 (1986) (setting forth general principles concerning domestic and transboundary natural resources and environmental interferences with those resources).

2. Environment Treaties

Treaties fostering development are much broader in scope and well-established than those favoring environmental protection. Economic and social development are supported by numerous treaties, including the United Nations Charter, the treaties creating the World Bank, the World Trade Organization and the International Monetary Fund; and the two principal human rights covenants. Because no overall covenant for sustainable development exists, and because there is no globally recognized human right to a decent environment,[445] the natural resources protection aspect of sustainable development must be pieced together from resource-specific treaties and protocols. These agreements concern, for example, climate change, biodiversity, desertification, ocean fisheries and protection of the stratospheric ozone layer. These treaties do not apply to all natural resources or environmental threats.[446] In addition, most are relatively recent in origin, which means that their norms are not necessarily well-established or precisely articulated.

The disparity between the environmental treaties and the other treaties creates both opportunities and risks for sustainable development. Treaty implementation provides discrete and manageable contexts for addressing specific problems related to sustainable development that can then be applied in other contexts. For example, the Vienna Convention for Protection of the Ozone Layer[447] has led to a series of protocols and amendments for reducing the production of specific ozone-depleting gases. The convention has worked relatively well because the science concerning the potential for certain chemicals to destroy the stratospheric ozone layer is well-developed. In addition, the framework approach taken in the convention provides a workable means of making decisions, through protocols and amendments, about specific production reductions to be achieved for particular chemicals by particular dates. The Montreal Protocol began a process for reducing or phasing out the production of chlorofluorocarbons, halons and other chemicals known to damage stratospheric ozone.[448] Because developing countries threatened nonparticipation in this legal system however, developed-country parties agreed to

---

[445] *See* Maggio & Lynch, *supra* note 52, at 32-35.

[446] *See* Pallemaerts, *supra* note 82, at 4 ("At present, international environmental law is scattered throughout numerous conventions and other instruments, all of which are limited in scope and only deal with ecological issues in a sectoral, piecemeal fashion.").

[447] Vienna Convention for the Protection of the Ozone Layer, *supra* note 228.

[448] Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, S. TREATY DOC. NO. 100-10, *reprinted in* 26 INT'L LEGAL MATERIALS 1541 (1987). The protocol has been amended and adjusted by the conference of the parties on a regular basis since then, including amendments made in London in 1990 to ban production of CFCs and most uses of halons. *See, e.g.*, London Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, *supra* note 243.

give them an additional ten years to comply with the reduction requirements and to provide them financial assistance for compliance.[449] Although it is too early to say that the stratospheric ozone layer is no longer in danger, virtually all countries are honoring the protocol's requirements. Indeed, the convention's cardinal lesson thus far may be its demonstration that nations actually are capable of acting in their own self-interest on such problems.[450]

The Vienna Convention, as well as the Montreal Protocol and subsequent amendments, also are important milestones on the road from narrowly focused resource protection treaties to treaties that embrace sustainable development. A delayed compliance schedule and financial assistance for developing countries reflect the common but differentiated responsibilities of developed and developing countries. Because stratospheric ozone depletion provides a specific context for addressing sustainable development, the lessons learned from that convention about the effectiveness of particular legal and policy tools—both international and national—can be applied or adapted in other contexts. The use of framework conventions to establish a legal regime for addressing a particular problem, the subsequent adoption of protocols setting more specific requirements and the use of targeted financial assistance to help developing countries and countries in transition meet their obligations are well-demonstrated by the ozone convention. Because it contains similar provisions and was drafted with a keen eye for its likely economic effects in all countries, the climate change convention also may be characterized as a sustainable development treaty, not just an environmental treaty.[451] But there are national lessons as well. The United States, for example, has implemented the ozone convention by combining regulatory prohibitions against the production of specific chemicals[452] with an increasing excise tax on the sale or use of these chemicals.[453] Because

---

[449] *See* London Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, *supra* note 243, art. 5; Sands, *supra* note 4, at 316.

[450] *See* DAVID HUNTER ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND POLICY, ch. 8 (1998).

[451] *See* Framework Convention on Climate Change, *supra* note 9, arts. 4.2, 4.3, 11; Sands, *supra* note 4, at 331; David Hodas, *The Climate Change Convention and Evolving Legal Models of Sustainable Development*, 13 PACE ENVTL. L.J. 75 (1995). The Biodiversity Convention may also be characterized as a sustainable development treaty. *See* Sands, *supra* note 4, at 334-35. The Biodiversity Convention's purposes are to conserve biological diversity, to ensure the sustainable use of its components, and to ensure a fair and equitable sharing of the benefits of its use. *See* Convention on Biological Diversity, *supra* note 9, art. 1. It also contains provisions for financial assistance to developing countries. *See id.* arts. 20, 21.

[452] *See* 42 U.S.C. §§ 7671-7671q (1994).

[453] *See* Omnibus Budget Reconciliation Act of 1989, Pub. L. No. 101-239, § 7506, 103 Stat. 2106, 2364-69; Omnibus Budget Reconciliation Act of 1990, Pub. L. No. 101-508, § 11203, 104 Stat. 1388, 1388-421 to 1388-423 (taxes). The tax increased annually on a per-pound basis, doubling and then tripling the price of these chemicals. *See* J. Andrew Hoerner, *Taxing Pollution*, *in* OZONE PROTECTION IN THE UNITED STATES: ELEMENTS OF SUCCESS 39, 44-49 (Elizabeth Cook ed., 1996).

it appears the tax was probably more effective in eliminating the production of offending chemicals than the regulatory provisions,[454] taxation will likely be considered in other situations to supplement regulation.

In sum, by breaking problems into discrete pieces, the environmental treaties provide a focused opportunity to solve problems and obtain experience that can be used to address others. Yet these same features also create risks for sustainable development. The most fundamental risk is the strong possibility that the conceptual framework on which sustainable development is based will be obscured or ignored. Differences in substantive outcomes, procedures and governance among environmental treaties addressing various problems may impede the coherent integration of law and policies concerning sustainable development. The tendency for the ratification process for particular treaties to be dominated by the particular issues raised by affected interests may also impede a coherent understanding of the bigger picture within particular states.[455]

Agenda 21 and related instruments also cover vastly more ground than the environmental conventions. Implementation of sustainable development primarily through existing treaties would strongly bias sustainable development in favor of developed countries and could thus undermine the entire framework. The multilateral environmental treaties tend to be based on global problems such as climate, stratospheric ozone and biodiversity, which are of primary interest to developed countries. These treaties, however, do not cover air and water pollution, inadequate drinking water, improper disposal of sewage and solid waste and similar problems of concern to developing countries, nor do they directly address consumption of resources.

Finally, the comparatively more recent articulation of environmental protection as a norm means that many of the environmental treaties are not being fully implemented and that significant gaps remain. The negotiation of the Kyoto Protocol, for example, does not necessarily mean that developed countries will ratify or implement it; many countries are only beginning to understand its consequences for them. Thus, an effort to cobble together existing development and environment treaties would show a decided disadvantage for the environment.

---

[454] *See* Hoerner, *supra* note 453.

[455] The Biodiversity Convention, the other convention that was opened for signature in Rio, has not yet been ratified in the United States because of intellectual property issues concerning the medicinal and other uses of organisms found in developing countries. A major objection to ratification of the Kyoto Protocol is the absence of any binding agreements by developing nations to reduce greenhouse gas emissions. Such specific issues make it much harder to grasp the overall sustainable development context in which they arise.

Overcoming such disadvantages will require resort to the international political commitments on which sustainable development is based and public support for those commitments. Greater integration of sustainable development norms into environmental and other treaties also would be helpful. Ultimately, however, sustainable development norms need to be integrated into laws at the national level, regardless of whether those norms are supported by treaties.

3. Trade Treaties

The integration of trade and the environment is one of the most important challenges facing sustainable development. Here, perhaps more than in any other area of international law, substantial concern exists that the activities fostered and encouraged by treaties themselves will prevent or undermine national efforts to achieve sustainable development. Trade is one of several aspects of development that were historically discussed separately from the environment. Agenda 21 recommends that governments seek to make "trade and environment policies mutually supportive in favour of sustainable development."[456] By creating new or expanded markets for goods and services, trade liberalization can stimulate economic growth, improve the lives of those to whom the goods and services are available, increase national interdependence and enhance the potential for peace and security.[457] If trade and the environment are not reconciled, however, trade will cause adverse environmental and social effects that will weaken the ability of trade to contribute to overall human well-being and even destroy much of the environmental base on which much trade depends. More than five years after UNCED, however, the paths of trade liberalization and environmental protection continue to collide frequently.[458]

The legal structure that supports trade liberalization and the historical momentum for trade liberalization suggest a daunting chal-

---

[456] Agenda 21, *supra* note 1, ¶ 2.21(a); *see also* Rio Declaration, *supra* note 3, princ. 12 ("Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.").

[457] *See* Daniel C. Esty & Damien Geradin, *Market Access, Competitiveness, and Harmonization: Environmental Protection in Regional Trade Agreements*, 21 HARV. ENVTL. L. REV. 265, 265 (1997).

[458] *See id.* at 266; *see also* Wolfgang Benedek, *Implications of the Principle of Sustainable Development, Human Rights and Good Governance for the GATT/WTO*, *in* SUSTAINABLE DEVELOPMENT AND GOOD GOVERNANCE, *supra* note 12, at 274. The trade and environment literature is extensive. *See, e.g.*, DANIEL C. ESTY, GREENING THE GATT: TRADE, ENVIRONMENT, AND THE FUTURE (1994); TRADE AND THE ENVIRONMENT: LAW, ECONOMICS, AND POLICY (Durwood Zaelke et al. eds., 1993); Robert Housman, *The North American Free Trade Agreement's Lessons for Reconciling Trade and the Environment*, 30 STAN. J. INT'L L. 379 (1994); Robert F. Housman & Durwood J. Zaelke, *Making Trade and Environmental Policies Mutually Reinforcing: Forging Competitive Sustainability*, 23 ENVTL. L. 545 (1993); Edith Brown Weiss, *Environmentally Sustainable Competitiveness: A Comment*, 102 YALE L.J. 2123 (1993).

lenge for sustainable development, and it is by no means certain that sustainable development will prevail. Trade liberalization agreements, particularly the General Agreement on Tariffs and Trade (GATT), contain relatively precise norms that have been accepted and refined for as much as half a century. These agreements also cover a growing range of trade activities, including not just goods but also services,[459] intellectual property,[460] and perhaps investments.[461] Trade treaties also trump soft law instruments such as Agenda 21, including its recommendations on production and consumption. Unlike Agenda 21, trade liberalization agreements have created and strengthened a substantial constituency of economic beneficiaries who support continued efforts to open up trade. Put starkly, the central achievement of Rio was an attempt to superimpose a nonbinding framework on long-existing legal norms.

The trade agreements can affect national efforts to achieve sustainable development in positive and negative ways. On one hand, governmental subsidies to unsustainable production methods may give a competitive advantage to products of those methods. In addition to directly violating the polluter-pays principle, such subsidies also weaken the competitiveness of production methods elsewhere that do not create adverse environmental and social effects. Because many subsidies are prohibited by GATT,[462] it is possible that GATT will lead to the reduction of those that compromise sustainability.

On the other hand, several recent trade decisions hold that certain national environmental protection standards discriminate against goods produced by other nations.[463] National laws and programs for environmental protection and for sustainable development in particular economic sectors may thus be directly vulnerable to claims of trade discrimination. Environmental and social (e.g., labor) laws in a country also may be indirectly vulnerable because of competitive advantages from countries with less stringent laws.[464] In addition, trade liberalization can weaken communities by breaking down preferences and supports for local economic activities. Without such preferences and supports, many of these activities can no longer compete

---

[459] *See* Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, *supra* note 30, Annex 1B (General Agreement on Trade in Services).

[460] *See id.* Annex 1C (Agreement on Trade Related Aspects of Intellectual Property).

[461] *See* Directorate for Financial, Fiscal, and Enterprise Affairs, Organisation for Economic Co-operation and Development, *The MAI [Multilateral Agreement on Investment] Negotiating Text (as of 14 February 1998)* (visited Mar. 25, 1998) <http://www.oecd.org/daf/cmis/maitext.pdf>; WORLD WILDLIFE FUND, IS THE MULTILATERAL AGREEMENT ON INVESTMENT SUSTAINABLE? (1996) (arguing that it is not sustainable).

[462] *See* Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, *supra* note 30, Annex IA (Agreement on Subsidies and Countervailing Measures).

[463] *See generally* RAJ BHALA, INTERNATIONAL TRADE LAW: CASES AND MATERIALS 1187-1232 (1996) (reproducing and discussing several cases).

[464] *See* COSTANZA ET AL., supra note 166, at 167-71.

economically. Wholly apart from environmental concerns, then, trade liberalization can conflict with the values of local autonomy and social cohesion that are supported in Agenda 21.[465] These factors, taken together, encourage nations to live beyond their environmental carrying capacity by relying on unsustainable production practices elsewhere.[466]

Trade liberalization also has positive and negative effects on the ability of national governments simply to govern. Because foreign investment in a country can not occur without a sufficiently reliable legal system to support that investment, globalization can lead to strengthening of governmental capacity, at least for protection of corporate investments. It can also help move nations toward democratic governance. Such improvements in the legal system, however, may or may not have positive spillover consequences for human rights or the environment. More basically, trade liberalization weakens national governments because mobile capital reduces the continuing reliability of the tax base, exerting downward pressure on governmental social development and environmental protection efforts, and on the ability of citizens to secure reforms.[467] Whether or not it is shifting capital to those countries with the least sustainable practices,[468] globalization has encouraged and fostered a free market ideology that is hostile to, or at least suspicious of, government efforts to improve quality of life. Because of national sovereignty, however, only governments can provide a legal and policy framework for improving the lives of their citizens and the environment on which they depend. Sustainable development is thus a way of curbing the adverse effects of globalization.

To protect and ensure their ability to foster sustainable development, nations need to consider several approaches to trade. One is to negotiate changes to GATT and other trade treaties.[469] The challenge

---

[465] *See id.* at 180-81.

[466] *See id.* at 182-84.

[467] *See* Rodrik, *supra* note 47, at 25, 27-30; *see also* Roger C. Altman, *The Nuke of the 90's*, N.Y. TIMES, Mar. 1, 1998, § 6 (Magazine), at 34 ("Markets will be the dominant, worldwide force of the early 21st century, dwarfing that of the United States or any consortium of nations.").

[468] *Compare* Duane Chapman et al., *International Law, Industrial Location, and Pollution*, 3 IND. J. GLOBAL LEGAL STUD. 5 (1995) (suggesting that trade between countries with different pollution control practices can increase global pollution), *with* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, ECONOMIC GLOBALISATION AND THE ENVIRONMENT 12-13 (1997) (concluding that there is no general support for "pollution haven" hypothesis but acknowledging that some individual firms have moved from developed countries to developing countries to take advantage of lower costs).

[469] *See* Agenda 21, *supra* note 1, ¶¶ 2.21(b), 2.22. *But see* Uruguay Round Agreement Establishing the World Trade Organization, Apr. 15, 1994, pmbl. ¶ 1, *reprinted in* 33 INT'L LEGAL MATERIALS 1143, 1144 (stating that a purpose of the agreement is to allow "for the optimal use of the world's resources in accordance with the objective of sustainable development").

of integrated decision-making, both in GATT and in regional trade agreements, is ensuring that both procedural and substantive integration occur at a high level of specificity.[470] Another approach is harmonizing environmental and social standards among countries, which would reduce the likelihood of claims for trade discrimination.[471] Thus, each country's environmental standards and economic support for relevant industries would be comparable, so that no trade discrimination could occur. To the extent that countries take this approach, trade would provide further impetus for international cooperation, and more global or regional agreements for environmental protection. At the same time, aggressive challenges under GATT to other states' subsidies of unsustainable production methods may help the market move in a more sustainable direction. Finally, where protective trade measures are necessary to preserve a nation's environment, Agenda 21 suggests that these measures should be nondiscriminatory, trade restrictive only to the extent necessary, transparent and sensitive to the special situation of developing countries "as they move toward internationally agreed environmental objectives."[472]

B. Public Choice Theory

The other major challenge to sustainable development lies in the possibility that governments are so beholden to economic interests in unsustainable activities that they can not or will not make necessary changes. Effective governance is premised on a distinction between private interests, which seek to satisfy their private preferences, and public or citizen interests, which seek to benefit society as a whole. The former tends to be individualistic and market-oriented, while the latter relies on deliberation and community.[473] These public and private realms are never totally separate, but a substantial degree of separation is necessary if government is to do its job.[474]

Public choice theory attempts to understand the ways in which individuals and corporations use government, and particularly legislatures, to further their own ends.[475] By using government to further their particular interests, groups enrich themselves at the expense of

---

[470] *See* Esty & Geradin, *supra* note 457, at 334-35. The approaches used to address this issue in regional trade treaties such as the North American Free Trade Agreement and the Treaty Establishing the European Community could produce better environmental and economic results under GATT. *See id.*

[471] *See* Rio Declaration, *supra* note 3, princ. 12.

[472] Agenda 21, *supra* note 1, ¶¶ 2.22(i), 39.3(d).

[473] *See* SAGOFF, *supra* note 165, at 50-73.

[474] *See id.* at 42-47.

[475] *See* FARBER & FRICKEY, *supra* note 20, at 7. Though their review is based on the United States, the issues raised by public choice theory exist in any legal system. In pointing to such problems, public choice theory can help lead to solutions and provide insights about the likely effectiveness of those solutions. *See id.* at 117-18. Public choice theory also can lead to cynicism about government, a result that is not conducive to sustainable development.

unrepresented groups, direct government resources in socially unproductive ways and undermine democratic governance.[476] In many cases, governments or governmental officials are simply corrupt.[477]

As public choice theory indicates, sustainable development will not be realized unless it includes a means of overcoming the power of these interests.[478] National governments already encourage and support unsustainable activities through subsidies and other means. This support is facilitated by separate consideration of environmental and economic issues, by a range of existing laws and practices, and by a tendency to limit environmental protection tools to regulation. These disparities between sustainable development and current practice in individual countries are not substantially challenged by existing treaties. In the case of trade, treaties may even reinforce those disparities. The failure of governments to accomplish much in the first five years after the Earth Summit surely is due in part to their unwillingness to confront economic interests that these governments both depend on and support. An irony of this conceptual framework, and a potential barrier to its implementation, is that it depends on the same governments that are now contributing to unsustainable development.

The drafters of Agenda 21 included several means for overcoming this problem, although it is far from clear that these means are sufficient. To begin with, Agenda 21 encourages and supports public participation in governmental decision-making at all levels concerning every aspect of sustainable development—whether or not governments themselves encourage it. Participation by affected constituencies in decision-making enhances the likelihood that sustainable development strategies will be effective.[479] Such participation also can empower people who are not currently part of the decision-making process and foster democratic governance. Increased public understanding of sustainable development also is likely to encourage greater governmental support for it.[480] It is thus significant that there has been a worldwide increase in citizen understanding, involvement and access to decision-making for sustainable development since the

---

[476] *See id.* at 132.

[477] *See, e.g.*, Elizabeth Ibanda-Nahamya, *Combatting Corruption: A Measure for Shaping Decision Making in Order to Achieve Sustainable Development, in* SUSTAINABLE DEVELOPMENT AND GOOD GOVERNANCE, *supra* note 12, at 402.

[478] *See, e.g.*, WORLD BANK, WORLD DEVELOPMENT REPORT 1997: THE STATE IN A CHANGING WORLD, at 25 (1997) (identifying the opposition of powerful special interests as an obstacle to reform).

[479] *See* WORLD DEVELOPMENT REPORT 1997: THE STATE IN A CHANGING WORLD, *supra* note 478, at 10; Maggio & Lynch, *supra* note 52, at 37.

[480] *See* Lester, *supra* note 4, at 68.

Earth Summit.[481] The growth of that trend—in both magnitude and sophistication—is indispensable to sustainable development.

Effective citizen participation requires good information concerning national performance in moving toward fostering sustainable development, the value of natural systems to humans and other matters.[482] Because the gathering and distribution of this information may threaten economic interests in unsustainable activities, however, these interests can prevent governments from doing so. As an alternative, it may be appropriate for universities and other nongovernmental organizations to create quasi-official institutions to, for example, publish one or more supplemental accounts to coincide with the government's quarterly and annual GDP reporting. Such a system would need to be technically competent and have a high degree of public credibility. Public debate about supplemental accounts would also call into question the government's own accounting for GDP.

Capacity building is another means of overcoming the power of vested interests in unsustainable development. As this Article indicates, capacity building is needed in a number of areas. These include an ability to adopt and implement necessary laws. Capacity building also entails the ability to conduct integrated decision-making and collect and manage the information necessary to do so. In addition, it includes creation and dissemination of effective and appropriate environmental technologies. Finally, capacity building encompasses education in sustainability, both in schools and as part of a public conversation about national challenges and opportunities.

Every significant change in law or policy, including changes toward sustainable development, creates both winners and losers. Although citizen participation, public information and capacity building are all ways of overcoming the power of economic interests, national efforts to foster sustainable development would likely be more effective if governments also found ways of reducing the adverse effect of legal changes on those interests. That suggests the consideration of legal and policy instruments that include sufficient transition periods to recoup their investment, grandfather provisions for some existing activities, or some other means of diminishing their loss or even realizing a gain.[483] Governments and nongovernmental organizations also could find ways to strengthen the winners and thus reduce the potential one-sidedness of public disputes relating to sustainable de-

---

[481] *See, e.g., Assessment of Progress in the Implementation of Agenda 21*, *supra* note 7, ¶¶ 87-92 (reviewing the role of governmental and nongovernmental groups in the success of sustainable development); Scherr & Barnhizer, *supra* note 347, at 35.

[482] *See* WORLD DEVELOPMENT REPORT 1997: THE STATE IN A CHANGING WORLD, *supra* note 478, at 10.

[483] *Cf.* COSTANZA ET AL., *supra* note 166, at 201 ("[P]olicy changes are more likely to be acceptable and successful if they can be designed to make no one worse off.").

velopment. Such ways might include publishing information about sustainable development successes and the economic value of protecting particular natural resources. Governments also might consider subsidies and other economic assistance to help make sustainable activities more economically competitive.

These approaches do not, however, provide a particularly convincing answer to the claim that governments will not or can not change course. They do not explain why governments would want to encourage public participation that challenges their approach to problems, why semi-official institutions would be tolerated or listened to, why developed countries would provide significant financial and technical resources for capacity building in developing countries or why governments would seriously consider strategies for minimizing the economic impact of sustainable development on major interests if they can ignore sustainable development altogether. All of these things can help move governments in the right direction, but they hardly provide a concerted approach for doing so. Sustainable development thus requires a transition strategy for overcoming the power of vested governmental and nongovernmental interests. The creation and implementation of such strategies at the national level is among the most important challenges for sustainable development.

The claim that governmental support for unsustainable economic activity means governments can not or will not move toward sustainable development is reinforced by the soft law status of Agenda 21 and related agreements, as well as the CSD process. Arguably, UNCED was simply a public relations effort to make it seem that the world's governments wanted to take action on sustainable development, even though their real intent was to carry on as usual. The argument is supported by considerable evidence. Global poverty and environmental degradation have worsened since UNCED, and few countries have adopted laws or policies that will move them in substantial ways toward sustainable development.[484] Sustainable development is hardly a household world in the United States and in most other countries.

Ultimately, however, the sustainable development framework that came out of UNCED is the only internationally accepted framework for addressing poverty and the environment. Whatever their intent, many governments participated in the creation of documents that deserve to be taken seriously. The evidence also suggests that sustainable development is becoming better understood, and that it is being used to a greater degree by governments and others.[485] Indeed, sus-

---

[484] *See supra* notes 5-7 and accompanying text.

[485] *See, e.g., supra* notes 6, 482 and accompanying text.

tainable development surely commands greater attention than it would if UNCED had not been held.

Nor is it accurate to say that nations made no legal commitment to sustainable development in Rio. The Convention on Biological Diversity and the Framework Convention on Climate Change were both opened for signature at UNCED, and both are more accurately described as sustainable development treaties than simply environmental treaties.[486] Approximately 150 countries signed each of the two conventions in Rio.[487] While a nation's signature is not sufficient under either to make that nation a party to the convention, its signature prevents it from acting in a manner "which would defeat the object and purpose" of the conventions.[488] Thus, wholly apart from the soft law status of Agenda 21 and the Rio Declaration, nations did take an important legal step toward sustainable development at Rio.

Moreover, even if countries did not seriously intend to follow through on a general commitment to sustainable development in Rio, it is at least possible for their views to shift. Governments and circumstances change over time. Factors that may bring about a change in perspective include the reiteration of sustainable development concepts at international conferences, their occasional translation into hard international law, the use of sustainable development concepts in decision-making by other nations and the urgent nature of the problems that sustainable development addresses. This last factor is perhaps the most important of all. The worsening nature of poverty and environmental degradation suggest that necessity may overwhelm governmental apathy or antipathy toward sustainable development.

V. CONCLUSION

As a framework for national governance, sustainable development changes our conceptual landscape in four ways. First, and perhaps most basically, the framework helps us understand that sustainable development is not simply an artifact of international law and international institutions. The Commission on Sustainable Development and the international bodies that supervise the implementation of

---

[486] *See supra* notes 9, 451 and accompanying text.

[487] *See Environment, Energy Areas Key Markets for Future Business, U.K. Official Says*, Int'l Env't Daily (BNA), Mar. 17, 1993, *available in* LEXIS, Environment Library, BNAIED File (climate change convention); *Industry Wants U.S. to Sign Treaty by Deadline even if Statement Unfinished*, Int'l Envt. Daily (BNA), June 1, 1993, *available in* LEXIS, Environment Library, BNAIED File (biological diversity convention).

[488] Vienna Convention on the Law of Treaties, *supra* note 426, art. 18. A nation's signature is also a first step toward ratification, acceptance or approval, which then makes it a party. *See* Convention on Biological Diversity, *supra* note 9, arts. 33, 34; Framework Convention on Climate Change, *supra* note 9, arts. 20, 22. Countries that did not sign either convention can still become parties through accession. *See* Convention on Biological Diversity, *supra* note 9, art. 35; Framework Convention on Climate Change, *supra* note 9, art. 22.1.

various treaties, in fact, lack the legal authority and the political clout necessary to make sustainable development happen on their own. Sustainable development must be realized primarily through national actions, or not at all.

Second, sustainable development would change both the purposes and means of national governance. Governments should strive not just for peace and security, social development and economic development but also for protection of the environment and natural resources on which the rest depend. Moreover, they should seek to foster those goals for both present and future generations. Apart from environmental protection, the framework is directed toward a more equitable society.

National governments should thus create legal and institutional arrangements that engage, encourage and even propel all parts of society toward sustainable development. They should integrate their decision-making concerning environmental, social, and economic issues; ensure that economic progress does not come at the expense of progress in other areas; and use precaution to protect the environment and natural resources. Countries will need to repeal or modify subsidies and other laws that encourage unsustainable development, and use a variety of legal and policy instruments to foster sustainable development. Developed countries need to take a leadership role, creating attractive models of sustainable development within their own boundaries and providing assistance to developing countries.

Third, this framework provides a way of understanding the value of national governance in the post-Cold War period and of improving its effectiveness. The basic point is that governments have a responsibility to ensure certain minimum conditions for the well-being of their citizens. Moreover, because governmental effectiveness is compromised by economic development that creates environmental and social problems, sustainable development would better enable governments to ensure the well-being of their citizens. The market by itself cannot fulfill that role, nor can any other institution. This is not to endorse everything that governments do, nor to deny a substantial constructive role to the market. Rather, national governments should encourage the market to help further human well-being rather than compromise or ignore it.

Fourth, the sustainable development framework forces us to address important issues we might otherwise miss. Chief among these are the need for integrated decision-making, the leadership role that developed countries should play in seeking sustainable development, the overall relationship between developed and developing nations, the potential for trade to affect national efforts for sustainable development and the challenge of existing governmental support for unsustainable activities. The framework also identifies potential legal

and policy tools that have received insufficient attention, such as the repeal of subsidies that encourage unsustainable development.

We live at a defining moment in human history, as Agenda 21 says, because we have a choice between two paths. Growing poverty, environmental degradation and globalization of the economy call into question not just the purpose and effectiveness of governments but also the kind of world in which we and future generations will live. Sustainable development offers an alternative path that is difficult and challenging but which provides hope for a better world for ourselves and future generations. We can not take the latter path, however, unless we first recognize that we have a choice.